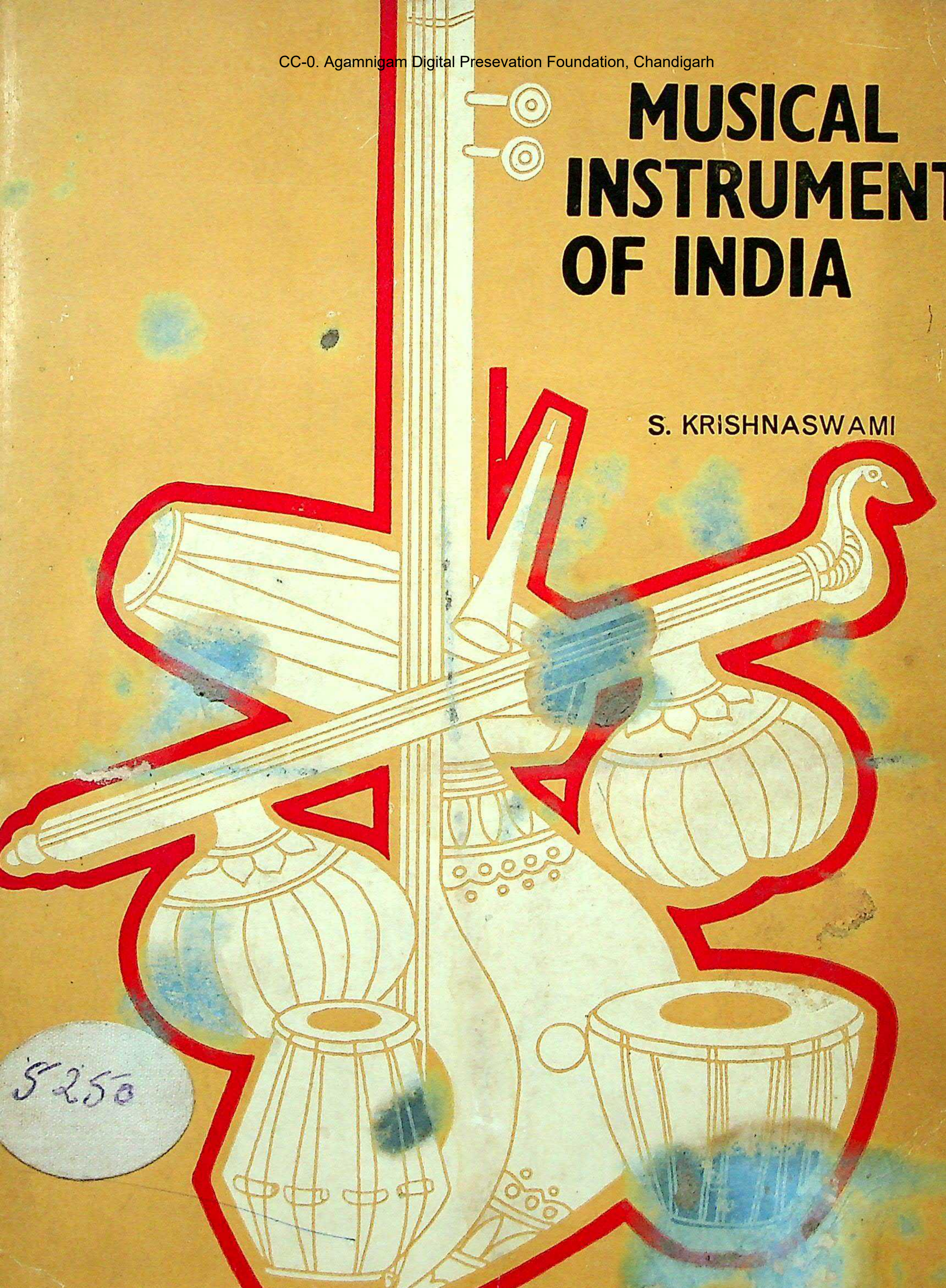
MUSICAL INSTRUMENTS OF INDIA

S. KRISHNASWAMI



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State Museum Lucknow

THE EARLY BEGINNINGS

THE POLISHED, ivory-ornamented elegance of modern Indian musical instruments such as the *veena*, the *sitar* and the *sarod* affords little idea as to how primitive were the instruments from which they have descended. In fact, the main families of existing musical instruments can all be traced to various devices of primitive man to make music which sounded different from his own voice.

Amongst the commonly accepted main classes of instruments, namely the string, the wind and the percussion, the last mentioned has the earliest origin. Every variety of percussion instruments contributes rhythm and dynamism to whatever type of music it accompanies.

Rhythm comes naturally to man, since everything in creation moves to it. It is man's oldest impulse. The ceremonial dancing of primitive man was a great outlet for his emotions, both when experiencing pleasure and when appeasing the God he feared. The basic impulse of rhythm in him led him to standardise the various forms of emotional expression he was familiar with and to create and design rhythmic instruments.

The simplest accompaniment of the dances of primitive man was provided by the dancers themselves. They marked time by stamping their feet and clapping their hands in simple rhythms. Sometimes they kept time by beating their chests, flanks and bellies with their hands. These methods might well have been the first pointers to a drum.

Gradually rattles came into use. They were probably first made out of nutshells, seeds and stones strung together or placed in a hollow gourd, and either suspended from the waist of the dancer or tied to the ankles, so that they sounded sharply in response to each movement. Such early beginnings resulted in the use of cymbals, gongs, bells, ankle-bells (*ghunguru*), *kartal* and so on.

Another rhythmic instrument used by primitive man was the stamping pit. This was just a big hole dug in the ground and covered with bark. People stamped on this lid with their feet and thus produced a sound somewhat like the beating of a large drum. One variation of the stamping pit that emerged sometime later was that instead of being covered with bark the pit in the ground was covered with hide and beaten with long, stout sticks. Such a 'drum' was called *bhoomi dundubhi*, and it was used on such occasions as the Mahavrata ceremony mentioned in the Samhitas and the Brahmanas.

A casual banging on a hollow gourd or a human skull might have suggested to primitive man that sound could be amplified by the use of hollowed-out materials. Hollow bamboos or large block of hollowed-out wood covered at both ends were commonly used. They were beaten with thick sticks. It is possible that the sound of wind-swept branches striking against the stretched membrane of a dead animal first gave man the idea of stretching and covering up an open frame with skin. The *duff*, the *khanjari,* the tambourine and all drums with open frames are extremely simple in construction. The ancient instrument *pataha* also belongs to this category. So does the conical drum. There the skin is stretched over a pot which serves as a resonator. Such drums have been in common use all over India since very early times. Two examples are the *bheri* and the *dundubhi*. These ancient drums still survive in the modern *nagara* and its variations.

Without doubt it must have been a little later that barrel-shaped wooden drums covered with skin on both sides came into use. There are numerous varieties of the two-sided drum ; the two that are most common and incidentally most representative are the *dhol* and the *mridanga*. The *dhol* and its cousins are normally used for weddings, festivals, processions, and other ceremonial occasions. The *dholak*, the *dholki* and some other variations are smaller versions of the *dhol*, while the *dhuk* is a larger version.

The *mridanga*, also called the *Pakhawaj* in the north, is considered to be the most ancient of the Indian drums. This is a highly developed percussion instrument in that it has the accuracy of pitch and a variety of tones which are uncommon in similar instruments in any other country. The tonal superiority of this instrument is not surprising since it plays a vital role in any concert of Karnatak music. The explicitly stated rhythmic accompaniment required of the *mridanga* is an organic part of Indian music as a whole. The *tabla* is another type of drum with a distinctive shape. It is in fact nothing but a *mridanga* or *pakhawaj* in pieces.

To overcome the unwieldiness of big drums, portable drums like the *damaru*, the *huruk* and the *udukku* were designed. These small drums are shaped like an hour-glass, flaring out above and below a narrow central waist. They can easily be carried under the arm and are known all over India by different names.

A development from the ancient pot drum is the *panchamukha vadyam*, literally the five-mouthed instrument. The mouths are covered with stretched skin and the musician plays on them with both hands. The sound produced by each mouth is different but the general quality of the sounds is very similar to that produced by the *mridanga*. Examples of this type of instrument are found at Tiruvarur and Tiruvanaikkaval, both in Tamil Nadu. A sculpture in the Nataraj Temple at Chidambaram shows the *panchamukha vadyam* along with two side drums. An early example of this type of drum, belonging to about the 3rd century B.C., has been discovered in the excavations at Rajgir in the north.

In the earlier type of drum, tuning to the required pitch was not easy. A slight dampness or change in temperature could disturb the pitch. A most important development in percussion instruments was, therefore, the introduction of multiple skins and multifaced heads as in the *mridanga*, the *pakhawaj* and the *tabla*. Where multifaced drum heads consist of two or three concentric rings of skin, it is easy to tune the instrument to the desired pitch and produce a wide variety of percussioned sounds.

In India, wind instruments, particularly those belonging to the horn group, are essentially meant to be played in the open air. They are the chief producers of sound on all festivals and other ceremonial occasions. Wind instruments also form an important part of temple music.

The oldest ancestor of all metallic horns is the curved buffalo horn. Horns like the *kombu*, the *shringa* and the *kahala* probably developed out of a megaphone-shaped instrument into which the early man spoke for the purpose of amplifying his voice. Out of this simple megaphone evolved the actual horn in which the air column within the instrument is set in vibration by means of the lips of the player. The rather terrifying sound of the horn was associated with all sorts of ceremonial and magical rites of primitive people. The piercing quality of its tone made it useful for giving signals—to summon an army, to announce important events and to issue public invitations for festivals and processions. The horn is played in isolation as well as in accompaniment with other instruments like drums and gongs. It possesses a rather hoarse sound and is not capable of producing many notes. No attempt has been made to play it scientifically and indeed its proper compass is not even understood.

One of the earliest wind instruments to develop was the flute, called by many popular names like *bansuri*, *venu*, and *murali*. This is an obvious sequel to the phenomenon in nature of the wind humming and whistling through bamboos which have been bored through by beetles and insects. This is a favourite image of the poet Kalidasa. The idea of producing the necessary current of air through the mouth and then blowing it through a bamboo must have followed naturally and resulted in the development of the flute.

The next stage was the invention of 'stops' or finger-holes in the flute so that the player could produce both high and low notes. This invention must have been hailed as a stroke of genius. There are several varieties of flutes. Some are held straight away from the face while others are held transversely, parallel to the eyebrow. Lord Krishna is always shown playing the transverse flute.

The art of producing sound from a double reed is as old as the discovery of the bamboo. The simplest example of producing sound from a reed is a blade of grass held tightly between the thumbs of both hands. Most of us know this from our boyhood days. When this blade of grass is folded together it becomes a 'double reed'. When blown into, the two halves of the reed vibrate against each other. The slit between the two sides of the reed opens and closes alternately, allowing the air to enter the instrument at intervals. This folded blade of grass or a pair of leaves tied together and attached to the mouthpiece of a pipe illustrates the principle of the double reed. In primitive-type instruments still in vogue among the aboriginal tribes and other developing folks in the interior areas, the reeds are crude and thick and distinct from those of the *shahnai* and the *nadaswaram*. These wind instruments produce tuneless music, shocking to the ears of people accustomed to refined tonal variations. The *nadaswaram* and the *shahnai* are essentially open air instruments but their exponents today have brought them a smoothness and refinement comparable to any other instrument fit for chamber music.

The first stringed instrument invented by man was the hunter's bow. When the hunter pulled the bowstring and released it to shoot the arrow he must have noted that a pleasant humming sound was produced. If he twanged the bowstring near the cavity of the mouth, the sound was amplified. If he rested the bow on some hollow object, the resonance increased still further. The next discovery probably was that the sound varied with the thickness and length of the string and tension. Strings of varying sizes must have been attached to the hunter's bow. These must have helped in evolving the basic principle of the harp. The fact that a piece of skin stretched over a hollow body such as a pot produces a sound of relatively higher density was already known to man. He used this principle to increase the depth of sound by fastening one end of the string to a hollow drum to serve as a resonator. In course of time, several strings of varying diameters came to be tied on the shaft of a stringed-instrument, each string tunable to a particular non-variable note. The ends of the shaft also underwent improvement imbibing both the bow pattern and the wise-animal shape. The bow-shaped *veena*, widely represented in sculptures dating as far back as the 3rd century B.C., also imbibe the ornate designs of the fauna class. Such an instrument is identified by the name of *yazh* in early Tamil literature.

The *swaramandal* and the piano are the result of a similar development. The bamboo idiechord is of great antiquity and is used by some of the aboriginal tribes in India even today. It consists of a bamboo which is closed on both sides. Part of the wall of this tube is loosened by means of two shallow, longitudinal incisions. Under the string thus obtained, a small bridge is inserted in the centre. The string produces different tones when plucked or struck, the tube serving as a resonator. Sometimes this instrument carries more than one string; and in some cases, the bamboo tube is wholly or partially halved longitudinally so that the instrument can be laid flat on the ground. One variation is obtained by lashing together a dozen bamboos as in a raft. The instrument is found in the bamboo growing regions of India and South-East Asia.

Later on the string. lifted out of the wall of the tube, was replaced by a stretched string made of materials like flax and gut. Subsequently a series of such strings were stretched over a box-like resonator and the strings were plucked with the fingers. Some of the instruments in this category had as many as a hundred strings. for instance the *satatantri veena* and the *katyayana veena*. The *swaramandal* and the *quanun* adhere to the same principle. These two instruments reigned for thousands of years but could not hold their own against the impact of more developed instruments like the modern *veena* and the *sarod*. The *quanun* became the *santur* of Kashmir and West Asia where the strings are struck with a small wooden device.

The next stage of development is the construction of instruments with a finger-board which is separate from the body. It is convenient to sub-divide this group two—*one*, where the instruments have a long neck, for instance the *tambura* and the *veena*; and, *two*, where the neck of the instrument is a mere narrowing of the instrument, as in the case of the *sarod* and the *rabab*.

A prototype of the first kind is a device where a stick is inserted into a small, resonating body such as a tortoise shell or a coconut shell and a string attached to it. By pressing the string against the neck or by touching it lightly with the fingers, the string is shortened, thereby producing a rise in pitch. The variation in the sound according to the length of the string led to the use of fretted instruments where the player could determine the pitch by varying with his fingers the length of the string that is to vibrate. Thus, more than one note could be produced from the same string. The frets usually consisted of gut strings tied round the neck or the finger-board as in the present-day *rabab*.

The more primitive instruments of this group are the *kinnari* and its variations. The *kinnari* is still used in certain parts of Andhra Pradesh. The finger-board rests on three gourds and the strings are supported on crude frets made of bone or shells. The *bin* or the northern *veena,* the *saraswati veena* of the south, the *sitar* and the *surbahar* are examples of fretted instruments with comparatively longer necks. These are representative of the highly developed stringed instruments of the plucked variety today.

Stringed instruments with short necks appear in the early history of music. These were first made out of single blocks of wood. The top was flat and the back convex. The body tapered towards the short neck. Early examples of this type are found in Gandhara reliefs where the neck with the pegs is slightly extended, the body is pear-shaped, and the instrument is played with plectrums. The modern *rabab* belongs to this group. The *rabab* remained a plucked instrument for a long time but subsequently began to be used as a bowed instrument. The belly was made of wood and covered with skin. The sides were slightly pinched to give more freedom for bowing. With this modification, it became the European rebec with its curved peg box and wooden sounding board. By lengthening the finger-board, it could acquire the characteristics of the viola and the violin. But the old Indian *rabab* still exists in its original form, except for the pinched belly, although it is played by plucking with the fingers. It is a popular instrument of Kashmir and is common in the rest of northern India also. The modern *sarod* is only a modification of the original *rabab*, to which a metal plate is added. This plate is fixed on the finger-boards and the instrument is played with a plectrum.

It is generally agreed that the earliest form of stringed instrument in India was plucked with the finger or struck with a short stick. To increase the resonance, the back of the stem was held across the mouth of the performer. Another device was to rest the end on a hollow gourd. Out of this state emerged a stringed instrument consisting of a small half gourd or coconut with a skin table or cover through which a bamboo stick passed longitudinally. This stick bore a string of twisted hair, which rested on a little wooden bridge placed on the skin table. Such an arrangement constituted the *ektara* of the north. It soon produced a close relative, the two-stringed *dotara* of Bengal. Nowadays the *dotara* has four strings. These early types of stringed instruments are still in vogue in interior India.

The earliest stringed instrument played with a bow was called the *ravanastra*, after the name of the mythological figure, What it looked like is rather doubtful. In some rural areas of Gujarat and Rajasthan, there exists an instrument called the *ravanhatho*. It has two strings of different kinds, one made with a species of flax and the other of horsehair. The hollow part of this instrument is a half coconut shell polished, and covered with the skin of a lizard and perforated below. The *rajnengi bana* of Madhya Pradesh, the *banam* of Orissa and the *gogged rajen* of the Saori tribes, all belong to the same family. These instruments are held and played like the modern violin.

The modern *sarinda* or *sarangi*, if traced back to its earliest state, would be a drum-like sound box, usually half the section of a bamboo covered in front with a parchment, fitted with two or three strings and played with a bow. Later, the instrument was hollowed out of blocks of wood, the top covered with skin and the body extended to form a finger-board. The *dotara*, the *chartar*, the *dhad sarangi* of Punjab, and the *chikara* of Uttar Pradesh are some simply constructed members of this family of instruments. The players often suspend or hold them against their bellies by a string or cloth and play them with bows to which sometimes *ghungurus* (bells) are attached to produce the dance effects. In the years that followed, this instrument slowly developed and sympathetic strings were added. This resulted in the modern *sarangi* which is a fine instrument and is used all over northern India as an accompaniment to vocal music. In the south, the violin has come to stay. The facilities it provides for rendering *gamakas* and other musical effects peculiar to Karnatak music have made the adoption of the violin so complete that the southerners no longer think of it as a foreign instrument.

The *sitar* with movable frets appeared fairly early in the north. The invention of the *dilruba* and the *esraj* consisted in a clever combination of the *sarangi* and the *sitar*. These instruments have frets like the *sitar* but are bowed like the *sarangi*,

THE VEDIC PERIOD

THE ANCIENTS in India associated music and dance with religious expression. They attributed the origin of music to gods and goddesses and assigned the art to mythological characters like *gandharvas* and *kinnaras* who figure in all the stories and legends connected with the science and practice of music.

In the course of her long history, India evolved an extensive variety of musical instruments. These were classified under four heads, namely, *tata* (stringed instruments), *sushira* (wind instruments), *avanadha* (percussion instruments like drums) and *ghana* (instruments which are struck against each other). Much ingenuity has been bestowed on the invention of these instruments. There are more than five hundred of them, each with a distinct name, shape, construction, technique of playing and quality of tone colour.

Ancient Sanskrit literature and treatises on the science of music commonly refer to Indian musical instruments. Ancient Indian sculpture also depicts musical instruments with an astounding wealth of detail. Numerous varieties of *veenas*, drums, pipes, gongs and bells are shown in the ancient sculptures of Bharhut, Mathura, Gandhara, Amaravati, Sanchi, Nagarjunakonda, Konarak, the temples of southern India and the frescoes and paintings of Ajanta, Bagh, Tanjavoor. These sculptures and paintings reveal such details as the number of performers who normally participated in concerts and dance parties, the types of instruments used as accompaniment and the postures in which the instruments were held and played. As for the theory of the music they practised in ancient India, and the name and characteristics of the instruments they used, the only sources of information are the treatises that deal directly with music.

Music and dance were among the amusements of the Vedic age. The Sama Veda is a standing monument to the wonderful skill and originality of the ancients in the science of vocal music. The chanted Veda is still the oldest extant combination of words definitely intended to be sung. In fact, the classical music of India originates from Vedic chants. There were professional musicians in the Vedic age, and a great variety of instruments as can be inferred from the frequent mention of *veena* players, flute players, conch blowers, drummers and so on.

The specially composed Rig Veda, consisting of invocations to the powers that be to be present at the sacrifices, refers to singing, dancing and to the musical instruments that accompany them.

Among the musical instruments in vogue during the Vedic period was the *dundubhi*, which was a kind of drum used both in war and peace. It is frequently mentioned even in the literature of a later date. The *bhoomi dundubhi* was a special sort of earth drum made by digging a hole in the ground and covering it with hide. This drum was beaten with long sticks and is mentioned as having been used in the *Mohavrata* ceremony. *Adambara* was another kind of drum. A drummer by the name of Adamhara Ghatta is mentioned in the list of victims at the *purushamedha* (human sacrifice) in the Vajasneya Samhita. *Aghati* was a type of cymbal used to accompany dancing, which is mentioned in the Rig Veda as well as the Atharva Veda. *Karkari* was a stringed instrument like the modern *sarod*. The *kanda veena* was a kind of *veena* made out of joints of reed. The *tunava* was a wind instrument made of wood and was probably very much like a flute. The *nadi* was a general term denoting any musical instrument. *Vana* was a multi-stringed musical instrument like the harp with a hundred strings (*satatantri*).

Several kinds of *veena* are mentioned in Vedic literature ; the *alabu veena*, the *vakra veena*, the *kapisirsha*, the *maha veena*, the *chala veena*. etc. There are also references to special types of instruments for women. The *pichoda* and the *kanda veena* are two examples. Each part of the *veena* has been separately described ; *sira*, or the head or neck; *udara*, the cavity or bowel ; *ambhana*, the sounding board; *tantu*, or the strings and *vadanakona* or the plectrum.

The Taittiriya Samhita gives a full description of the *veena*. It is brightly painted and studded with precious stones. The belly of the instrument is covered with red leather, and has ten holes to which the strings of twisted *darbha* grass or *moonja*, are fastened. The stem is made of wood.

The *dundubhi*, or the war drum, has dominated the martial music of India throughout her history. There are hymns devoted to war drums even as early as the Atharva Veda. Before the warriors went into battle, these drums were honoured ceremonially. They were washed and smeared with unguents. Then the priests struck the drums three times and brandished them over the warrior to the accompaniment of hymns.

In the ancient Indian epics *Ramayana* and *Mahabharata* many musical instruments are mentioned. It is to the *veena's* music that Lava and Kusa sing Valmiki's *Ramayuna*. Ravana chants to the music of the *veena*. Mention is also made of Lakshmana hearing music as he enters the palace of Sugriva. He hears songs and hears singing and ravishing strains of the music of the *veena* and some other stringed instruments.

The ladies' appartments in the palace of Ravana are also full of musical associations. Some of the musical instruments which Hanuman sees there are the *madduka* (a percussion instrument like the *mridanga*), the *patha* (similar to the *khanjira*), the flute, the *vipanchi*, the *mridanga*, the *panava* (another variety of *mridanga*), the *dindima* (a sort of *tabla*) and the *adambara* (a kettle-drum). A woman musician lies across her *veena*, an image which Valmiki compares poetically to a cluster of lotuses about a boat in a stream.

In the Mahabharata, Krishna uses a conch called *panchajanya* on the battlefield. Arjuna's conch is called *devadatta*. Krishna is constantly associated with the *venu* (flute) whose music charm the *gopis* of Vrindavan.

CHRONOLOGY

SANSKRIT TREATISES on music and literature containing references to musical instruments begin from about the 3rd century B.C. In Bharhut, Sanchi, Bhaja, etc., the artists of ancient India have sculptured various types of musical instruments in the scenes depicting the life of the Buddha. Varieties of *veenas*, flutes, drums, pipes, conches bells, and gongs are represented in the ancient sculptures. The type of *veena* which frequently occurs in these scenes is like a harp in the shape of a bow, which is used as a handle. There is a boat-shaped resonater. There are a number of parallel strings fastened to the bow-shaft, one over the other. The instrument was played by men and women in a sitting position. There were other types of *veenas* which were suspended from the arm and carried about. This type of instrument has been found in Gandhara, Amaravati and Nagarjunakonda (1st to 7th century A.D.). This type of *veena* remained in use down to the time of the Guptas. Samudragupta is represented on some of his gold coins playing the seven-stringed bow-shaped *veena* called *parivadini*.

In ancient Tamil literature this bow-shaped *veena* is called *yazh*. It appears to have been very popular in southern India. The instrument is elaborately described in the *Silappadikaram*. The kings of the early Tamil royal houses, the Cheras, the Cholas and the Pandyas, as well as several petty chiefs, patronised minstrels called *panas*, who, with the *yazh* on their shoulders, went from court to court singing songs describing the adventures of kings and nobles in war and love.

The strings of the *yazh* were tuned to absolute pitch and the instrument itself was played on open strings. Each string was named after the note to which it was tuned. Different *ragas* could be played by shifting the tonic. Since the strings produced only the pure notes, it was not possible to play the *gamakas* (graces) as can be done on the modern *veena* or the *sitar*. Originally the voice was closely accompanied by the flute which played the various *gamakas* and embellishments.

In the plastic art of India, we find two more types of *veenas*: one is like a lute with an ovoid resonator and a long neck similar to the modern *sarod* or mandolin, and the other is the *ektara* type which first appears in Indian art about the 7th century A.D. It is represented at Mahabalipuram in the descent of the Ganga. It was this type of *veena* which evolved from the 7th century onwards into the royal *bin* of the north and *veena* of the south. The bow-shaped *veena* and the mandolin-shaped *veena* also continued to appear side by side in the sculptural representations of ancient India until the 7th century. The *katyayana veena, the swaramandal* and the *mattakokila* are all developments of the original bow-shaped *veena.* These instruments must have dominated the Indian music world for hundreds of years before they ultimately succumbed to the impact of more melodic fretted instruments like the modern *veena* or *sitar.*

The sculptures of ancient India show many varieties of drums. In addition to ordinary cylindrical drums there is a set of twin drums made up of a vertical drum and a horizontal one. The player sits in front of the drums and plays upon both. Triple drums are also found in some places. These were perhaps used for accompanying the music of different musical scales such as *shadja grama, gandhara grama* and *madhyama grama.*

One also comes across narrow-waisted drums which can be carried under the arm. These drums are played like the *damaru* associated with Lord Siva who played it during the cosmic dance. There is the *shankha* provided at its mouth with a long tube to blow into. It is similar to the *dhavala shankhu* of the south. There are also representations of circular drums composed of skin stretched over a circular frame, examples of which are found all over India today : they are called by different names like *duff* in the north, *dappu* in Andhra Pradesh and *tambattam* in Tamil Nadu.

The flute, variously called *venu, vamshi, murali,* etc., is one of the principal instruments used for accompanying vocal music and dance along with gongs and cymbals.

The musical instruments mentioned in the literature of the Gupta period and presumably in use in this period are the *vipanchi,* the *parivadini* (a seven-stringed instrument) ; the *muraja* (a type of drum), the *vamsa* (flute) and the *kamsya tala* (cymbals). Kalidasa refers to *turya vadya* (wind instruments), *vallaki* and *atodya* (stringed instruments). He also mentions the *mridanga* (drum), the *vamsa* (flute) and the *pushkara* (drum). The *dundubhi* was a type of kettle-drum like the *nagara* ; the *jalaja* was a conch sounded in war and peace and the *ghanta* was a bell.

The orchestra as we know it today is a recent development in the history of Indian music. It is also called *jantra sammelan* or *vadya vrinda* meaning 'group of musical instruments'. However, small groups of instruments, usually about five and not more than ten, seem to have been in existence in ancient times. These 'orchestras', composed of varieties of string, wind and percussion instruments, were played in palaces, processions, during worship, and in dance performances. Ancient sculptures depict this theme frequently in decorative bands and friezes. The instruments comprising such ensembles are usually the mandolin type *veena,* small drums, gongs, cymbals, pipes, flutes, pot-drums (*bhanda vadya*), twin drums and triple drums. *Sabda puja* was a ritual in which the Buddha was worshipped with the sounds of musical instruments as offering. Emperor Asoka always took a full orchestra with him on all pilgrimages and tours. Bana mentions the *shankha*, the *dundubhi*, the *muraja*, the *venu*, the *veena*, the *jallarika*, the *tala* and the *kahala*. Whenever a king went to his bath chambers (*snana bhavana*), there was a "blare of *shringa* accompanied by the din of *veenas*, drums, cymbals, etc., resounding shrilly, diverse tones mingled with the uproar of multitude of singers."

In ancient plays, there was always an orchestra which served a definite dramatic purpose. *Kutapa* is the ancient term for orchestra. *Tata kutapa* is a group of stringed instruments, including the flute. *Avanaddha kutapa* is a group of drums. The smallest group consisted of a chief vocalist, two supporting singers, two additional voices, two flutes, two leading drums and a minor drum. The biggest group was composed of as many as 12 male and 12 female voices, 26 flutes, 6 main and 3 subsidiary drums. Many types of stringed instruments were used, for instance *chitra* and the *vipanchi* which were plucked with the fingers or with a plectrum. The main percussion instrument was the three-faced *bhanda vadya* or the *tripushkara*. There were also other drums like the *panava* and the *dardura*.

The period beginning from the 12th century appears to have been a turning point for the music and musical instruments of India. The Muslim rulers of India were great patrons of music and brought with them musicians from Persia and Arabia. Amir Khusrau, a Turk born of an Indian mother in Etah, Uttar Pradesh, did much to popularise and enrich Indian music by introducing the *mukam* or scale system at a time when the only system privalent was the *murchhana* or the melodic mood system. The scale system later became known as *thaat* system in the north and *mela* system in the south. Deeply interested in furthering the indigenous art and culture of India, Khusrau seems to have made a critical study of the music and musical instruments then in vogue, in the country. He improvised, evolved and introduced new styles of singing, new instruments, new *talas* and new *ragas* which were not a departure from but an enrichment of the existing system. The evolutions then, of the *sitar* and *tabla*, the *qawwali* form of singing and several *ragas* and compositions are credited to his period.

In the north, Indian music reached the peak of its splendour during the reign of Akbar (1542-1605) who was a great patron of the arts. The musical instruments used in the court of Akbar were the *bin* (*veena*), the *swaramandal*, the *nai* (flute), the *karna* (trumpet), the *ghichak* (a kind of Persian lute), the *tambura*, the *surnai* (*shahnai*) and the *quanun* (a kind of *swaramandal*).

The *naubat* (an ensemble of nine instruments) was meant exclusively for royal celebrations. *Naubat* literally means 'nine performers' ; it consisted of two *shahnai* players, two *naqqara* players (drummers), one *jhang* (cymbals) player, one *karna* (horn or *shringa*) player, one beater, one assistant and one *jamadar*.

Ain-i-Akari, Abul Fazl's account of the reign of Akbar, mentions the instruments that formed part of the royal establishment, the hours during which they performed and the names of the thirty-six musicians who adorned the court of Akbar with the famous maestro Tansen heading the list.

The *naqqarkhana* of the emperor was a special establishment which comprised the following :

Kurga (monster kettle drums)	18 pairs
naqqara (big drums)	20 pairs
dhol	4 units
surnai (shahnai)	9 units
nafeeri (trumpets)	2 units
karna (large trumpets)	6 units
shringa (horns)	2 units
jhanj (cymbals)	3 pairs

Such a *naqqarkhana* was an attribute of sovereignty.

Many musical instruments were developed, introduced or given Persian names after effecting some improvements in the existing forms. The *sitar*, the *esraj*, the *surshringar*, the *taus*, and the *tabla* are examples of such developments.

Among the many theorists and musicians who were responsible for the development of music in the 16th century, Pandit Ahobala, the author of *Sangita Parijata* (early 17th century) deserves special mention. He seems to be the first musicologist to describe the values of notes in terms of lengths of the string on the *veena*. *Sangita Parijata* is one of the important works relating to the Hindustani system. After this, during the reign of Raghunatha Nayak of Tanjavoor (1614-1632) a musicologist called Govinda Dikshita fixed the frets of the south Indian *veena* so that all *ragas* could be played. This fixing of the frets is an important landmark in the development of the southern *veena*. Before this the frets on the *veena* were movable, and their number varied. Still earlier, the *veena* had a plain finger-board without frets. The earliest *veena* was one with open strings which involved elaborate processes of tuning and retuning.

During the past centuries, a great number of instruments have fallen out of the race and gone into disuse. Hundreds of string, wind and percussion instruments have gone through the testing fire of time ; some of them went into oblivion completely as they were unable to sustain the changing styles of our music from time to time. Others emerged in fuller glory, and developed into our modern classical instruments. The remaining bulk stubbornly dragged on in their primitive form through the centuries. We still find hundreds of these quaint instruments in use among the village folk and the aboriginal people of India.

The string instruments mentioned in our ancient books, for instance *ambuja*, *alapini*, *parivadini*, *vipanchi*, *chittira* and *mattakokila*, have all changed into the highly developed *veenas* of the north and south, the *sitar*, the *sarod*, the *gottuvadyam*, the *vichitra veena*, the *esraj*, the *dilruba*, the *sarangi* and many others. The rather loud *data*, *bheri*, and *dundubhi*, and the more subtle *mardalas* and *murajas* have gradually evolved into such refined percussion instruments as the *mridanga*, the *pakhawaj*, and the *tabla*, all remarkable for their accuracy of pitch and quality of tone colour.

The construction of an instrument, its musical potentialities, tone and colour suggest certain definite line of musical development. The appearance of a new instruments heralds the beginning of a new musical style. The revolution of its shape and constitution makes it possible for a musician to obtain new forms of sound. The *nom tom* in the *raga alapana* in the Hindustani system and the *tanam* of the Karnatak system of music are obviously an imitation of the *veena* style. Various *gamakas*, graces and other technically recognised musical accents in Karnatak music are based on nuances which appeared with the perfecting of the southern *veena.*

It can be conjectured that at an early stage, the Indian *katyayana veena*, the *swaramandal* and the *mattakokila veena* travelled westward and became the *santur* in West Asia and the clavichord and the harpsichord in the West ; and these very instruments finally helped in the evolution of the modern pianoforte. It is commonly acknowledged in the West that the bow of the violin and the transverse flute are a gift of India. On the other hand, the Western violin has come to stay in India, especially in the south where the possibilities of enriching Karnatak music by using the violin were observed more than a hundred years ago. The facilities for playing the various *gamakas* and graces peculiar to Indian music have made the adoption of this instrument so thorough that the southerners have almost forgotten to think of it as a foreign instrument.

Throughout India we find amongst the common people and the aboriginal tribes various types of small bowed instruments, each consisting of a small gourd or half a coconut covered with skin through which a bamboo stick bearing one or two strings is passed longitudinally. These instruments like the violin, are held and played with crude bows. The *ravanhatho* used by the musicians of Gujarat and Rajasthan and the *rainengi bana* belonging to the aboriginal tribes of Madhya Pradesh are some examples which are reminiscent of the still developing violin. It is possible that the origin of the violin can be traced to India.

Another occidental instrument which is being successfully used in enriching Indian music is the clarionet which is fitted with mechanical keys or stops. Though some are of the opinion that this instrument, by the very nature of its construction, is unfit for playing Indian classical music, capable artistes have succeeded, by the clever manipulation of the keys and by modulating the blowing, in using it to great musical advantage. Thus they effectively bring out the *gamakas*, the subtleties or quartertones and microtones and various embellishments so that the instrument becomes as suitable for Indian music as the flute or the *bansuri*. The clarinet is now an important constituent of the Indian orchestra.

In film music a variety of Western musical instruments are being used for creative purposes. Besides the violin and the clarionet, the occidental instruments used are the oboe, the trumpet, the cornet, the saxophone, the Hawaiian guitar, the Spanish guitar, the banjo, the mandolin, the piano, the violincello, the double bass, the xylophone, the tronbone, the flute, the bassoon and various brass instruments. The instruments used to mark the rhythm are the maracos, castanets, the triangle, temple blocks, the clog box and kettle drums.

Some Indian folk instruments like the *dholak*, the *naal*, the *anand lahari*, the *morchank*, the *ektara* and varieties of drums are being lifted out of the narrow confines of conventional playing and increasingly harnessed for the purposes of modern Indian music.

MIGRATIONS

THE MIGRATION of Indian musical instruments to the countries surrounding India at an early period forms an interesting subject of study. In pre-Buddhist times, India seems to have had commercial and other relations with Egypt, Sumer and other West Asian regions. Archaeologists have discovered in Egypt and Babylon musical instruments similar to the *yazh* of ancient Tamil Nadu. Representations of priests playing these harps in the tomb of Ramesus III show instruments distinguishable not only by the number of their strings but also by elaborately decorations, the framework carved and inlaid with gold, ivory, tortoise shell and mother of pearl. Their construction and beauty are reminiscent of descriptions of the *yazh*.

Representations of an instrument similar to the *yazh* discovered in Babylon have been attributed to about 3000 B.C. Actual specimens belonging to this period have been unearthed at Ur. The Sumerian harps were the oldest and most characteristic. The strings were either plucked by the fingers or struck with a plectrum, The instrument was often accompanied by the *ka-gi* (flute) in the same way as the ancient Tamil *yazh* was accompanied by the *kuzhal*, also a type of flute. Most of the ancient Indian sculptures show the bow-shaped *veena* along with the flute. The instrument was originally called *pan* throughout a wide district of western Asia in the early days. *Pan* means 'sound' or 'music'. Curiously enough, the various musical modes in south Indian music are called *pans* in Tamil and musicians are called *panars*.

In India, this bow-shaped *veena* has reigned supreme from the beginning. It disappeared after the time of the Guptas but it survives in Burma under the name of *saun*. The instrument was known in Egypt as the *ban* (Indian *bana*, or *bin*, or *veena*). It is known as *gogia bana* among the Gond tribes of Madhya Pradesh. The instrument consists of a stout staff in the shape of an arc, one end of which is fixed to a boat-shaped resonator. About five parallel strings are fastened to the staff, one over the other.

Buddhism was a great force in the expansion of Indian culture. The period between the 4th and 7th centuries was, for the music of India, a period of great expansion. That Indian musical instruments migrated to Central Asia during this period is proved by the existence of Indian instruments in the wall paintings,at Quizil, Yotkan, Tuanhuang and other important Buddhist centres of Central Asia. The mandolin-shaped *veena* which frequently occurs in the sculptures at Amaravati, Nagarjunakonda and Gandhara seems to have been introduced to Central Asia by the Buddhist missions. This *veena* became the *pipa* in China, and was changed into the *biwa* when it reached Japan in the 8th century.

Sculptural representations of musical instruments depicted in Borobudur, Prambanam, Champa and other places confirm that the music of India spread to neighbouring countries in the early centuries. It is well known that the art of Java, the Khmer country and Champa was deeply influenced by the culture and art of India. The illustrations of musical instruments at Borobudur show a remarkable similarity to those found in India. The *kachchapi veena* attributed to goddess Saraswati still survives in the Philippines where it is known as *kadjapi*.

PART TWO

DESCRIPTIVE NOTES

TAMBURA

The *tambura* (also called *tanpura* in the north) is one of the classical instruments of the stringed group. It is used all over India for drone accompaniment and its varieties are numberless, With its powerful and resonant drone, it forms a perfect base for the human voice.

In appearance the *tambura* is like the southern *veena*, without the latter's second gourd and elaborate head-piece. The bowl is usually a large one, from 25 cm. to 45 cm. wide. The best *tamburas* are made of jackwood or hollowed-out gourd. The overall length of the instrument varies from 1.05 m. to 1.5 m. The belly is usually slightly convex. The bridge, placed on the bowl in the centre, is made of wood or ivory.

There are four metal strings three made of steel and the fourth and lowest one of brass. The strings pass through holes in a ledge near the peg. The tuning pegs of the first and second strings are fixed at the side of the neck ; those of the third and the fourth strings are at right angles to the head. Little pieces of silk or wool placed in certain positions between the strings and the main bridge serve to improve the tonal effect and enable one to hear the overtones of each string clearly.

The strings are attached directly to the narrow ledge fixed to the body. There are beads threaded upon the strings, between the bridge and the attachment to which they are secured. These beads, pushed down in the direction of the attachment, act like a wedge between the belly and the strings; by thus stretching the strings, they serve to alter the pitch as required. This contrivance renders accurate tuning easier.

When played, the *tambura* is usually held upright, the body resting upon the ground in front of the performer. Sometimes the bowl is placed on the right thigh.

The strings are gently and continuously plucked with the fingers, one after the other, in the same order.

In the south, *tamburas* usually have wooden bodies whereas in the north gourds are generally used. The finest *tamburas* are made in Lucknow and Rampur in the north and Miraj (near Poona) in the West. In the south, Tanjavoor, Trivandrum, Vijayanagaram and Mysore are famous for the *tamburas* with wooden bodies. Tanjavoor *tamburas* are beautifully carved and ornamented with ivory.

BIN

The northern *veena*, usually called the *bin*, consists of a bamboo fretboard about 55 cm long and 75 cm. wide upon which are fixed 24 metallic frets, one for each semitone of two octaves. The frets are fixed on the stem by a resinous waxlike substance. This fretboard is mounted on two large gourds, each about 35 cm. in diameter.

The instrument has four main strings for playing ; it also has three side-strings. Of these two are on the left side, while one is on the right. The *bin* is held

5250

in a slanting position on the left shoulder, the upper gourd resting upon the shoulder and the lower gourd on the right knee. The strings are plucked by the right hand, and the left hand passes round the stem, pressing the strings over the frets for desired musical notes.

Originally the *bin* was used only as an accompaniment to vocal music. It is not only a well established instrument for solo playing but also the innovator of a distinctive and well recognized musical style of its own. The *bin* player masters *alap*, which is an elaboration of the *raga* in slow tempo, *jod* or *raga alap* in medium tempo and *jhala* or swift play in fast tempo. In these, no *tala* is used although the rhythm is maintained throughout by means of the *chikari* or side strings which also serve as the drone. Usually serious classical music of the Dhrupad style is played on this instrument and the main percussion accompaniment is the *pakhawaj*. In certain musical moods, the player repeats the percussion phraseology of the *pakhawaj* on the *bin* in terms of rhythmic musical phrases. This practice is called *tar paran.*

It is said that during the period between Amir Khusrau and Akbar, the *bin* had only twelve frets on which a range of three octaves could be played. Subsequently the number of frets was increased. Haridas Swami is credited with having improved the styles of playing the *bin* and standardised the different modes of music played on it.

The *bin* was very popular during the Mughal period. Thereafter the art of playing it was preserved and nourished by *beenkars* who mostly claimed their descent from Tansen, the musical wizard in the court of Akbar the Great. Later, the princes of northern and western India patronised many great masters of this string instrument. Ustad Wazir Khan, who was in the court of the Nawab of Rampur (Uttar Pradesh) till his death in 1926 was the most celebrated *beenkar* of this country. Among other famous *beenkar*-maestros who preceded or succeeded were Mohamed Ali Khan son of Amir Khan; Badku Mia, son of Basat Khan, the brother of Piyar Khan who invented *Sursringar;* and Umrao Khan Beenkar. Bahadur Husain Khan and the 19th entuary Dhurupadist Ustad Behram Khan Dagar's descendants Rajab Ali Khan and Zahir Uddin Khan are also legendary figures in the world of the *Bin.* Today, Ustad Asad Ali Khan, now in New Delhi, is the direct inheritor of the great tradition of the *bin* of his father Musharaff Khan and grand father Rajab Ali Khan. His contemporary is Ustad Zia Moinuddin Khan of Udaipur, son of Ziauddin Khan,

VEENA

The southern *veena* consists of a large body hollowed out of a block of wood, generally jackwood. The stem of the instrument is also made of the same kind of wood and the bridge is placed on the flat top of the body. The neck is attached to the stem and is usually carved into some weird figure, like the head of a dragon.

Another gourd, smaller in size than the rounded part of the body, is fixed underneath the neck and forms a kind of rest or support for the instrument. Twentyfour metallic frets, one for each semitone of two octaves are fixed on the stem by means of a resinous substance. The frets are arcs made of bell metal or of steel.

The *veena* has seven strings in all. Four of them are main strings that pass over the feets and are attached to the pegs on the neck. The three side strings are used for the drone and the rhythmic accompaniment. These strings pass over an arched bridge made of brass. They lie flat over the top of the body and are secured to the main bridge.

To play the *veena*, the performer sits cross-legged on the floor and holds the *veena* in front, The small gourd on the left touches the left thigh, the left arm passing round the stem so that the fingers rest easily upon the frets. The main body of the instrument is placed on the ground, partially supported by the right thigh. Sometimes the performer sits cross-legged on the floor as before but holds the *veena* vertically by placing the body of the instrument in front of him or in his lap. This method of playing is more popular in Andhra Pradesh.

Generally, the various parts of the *veena*, such as the neck, the stem and the main body are made ready separately and joined together later. But there is a type of instrument called, the *ekavada veena* where the whole length, comprising the neck, stem and bowl, is carved out of a single piece of wood. This type of *veena* is greatly prized. Its tonal quality and volume are richer than in the case of the ordinary *veena*.

The southern *veena* as we know it today was brought into use by a ruler of Tanjavoor called Raghunatha Nayak and his Prime Minister Govinda Dikshitar who first constructed a *veena* with twentyfour fixed frets. Before this the *veena* had less than twenty movable frets which had to be adjusted as in the northern *sitar*. The fixing of the frets (twelve for each octave) paved the way for the development of the famous scheme of seventy-two *melakartas* of the Karnatak system. The style of presenting Karnatak music has grown largely round the *veena* technique and many of the noted south Indian musicians, musicologists and composers of the past have been *veena* players.

The *tanam*, a creative type of music in the Karnatak system, is the elaboration of a *raga* in free rhythm in slow, medium and fast tempo. The *tanam* as played on the *veena* has emerged as a unique style peculiar to the *veena*.

The famous Seshanna and Subbanna of Mysore, Venkataramana Das of Vijayanagaram, Dhanammal of Madras and Karaikudi brothers—Subbaramier and Sambasiva Iyer, have been the greatest exponents of the *veena* in the south.

SITAR

The *sitar* is perhaps the commonest of all the stringed instruments of northern India. In superficial appearance the *sitar* is very much like a *tambura*. The body is usually made of a gourd cut in half near the core. Originally the gourd was almost flat, like the back of a tortoise and therefore such a *sitar* was called *kachchawa*. The name *kachchapi* was also given to a type of *veena* for the same reason.

The finger-board of the *sitar* is about 90 cm. long and 7.5 cm. wide hollow and deeply concave, covered with a thin piece of wood. There are sixteen to twenty-two slightly curved frets of brass or silver. These are secured to the finger-board by pieces of gut which pass underneath. This arrangement makes it possible for the frets to move so that intervals of any scale can be produced,

The *sitar* originally had only three strings, but the modern instrument has a total number of seven strings which are fastencd to pegs on the neck and the sides. These include the side strings (*chikari*) used both for the drone and the rhythmic accompaniment.

There are eleven or twelve sympathetic strings (*tarab*) which run almost parallel to the main strings under the frets. These are secured to small pegs fixed at the side of the finger-board. The sympathetic string are tuned to produce the scale of the melody which is being played.

The *sitar* is played by means of a wire plectrum (*mizrab*) worn on the forefinger of the right hand. The thumb is pressed firmly upon the edge of the gourd so that the position of the right hand should change as little as possible. All the styles peculiar to instrumental music namely, *alap, jod, jhala, meend,* etc., can be played on this instrument with telling effect. Long, unbroken musical passages such as the *tanas* of vocal music are rendered by stretching the string laterally against each fret. In this way it is possible to produce as many as six notes on a single fret.

As in percussion instruments, the *sitar* too has a phraseology or *bols* of its own, for instance the characteristic *da da* and *dir dir*. After *alap*, *jod* and *jhala* begins the regular playing or the *gat* with the *tabla* accompaniment. There are two popular styles of playing the *gats* which are named after two illustrious players called Maseet Khan and Raza Khan who first introduced them. The Maseetkhani style of *gat* playing has a slow tempo as its special characteristic while the Razakhani is known for its fast tempo and display with tabla accompaniment.

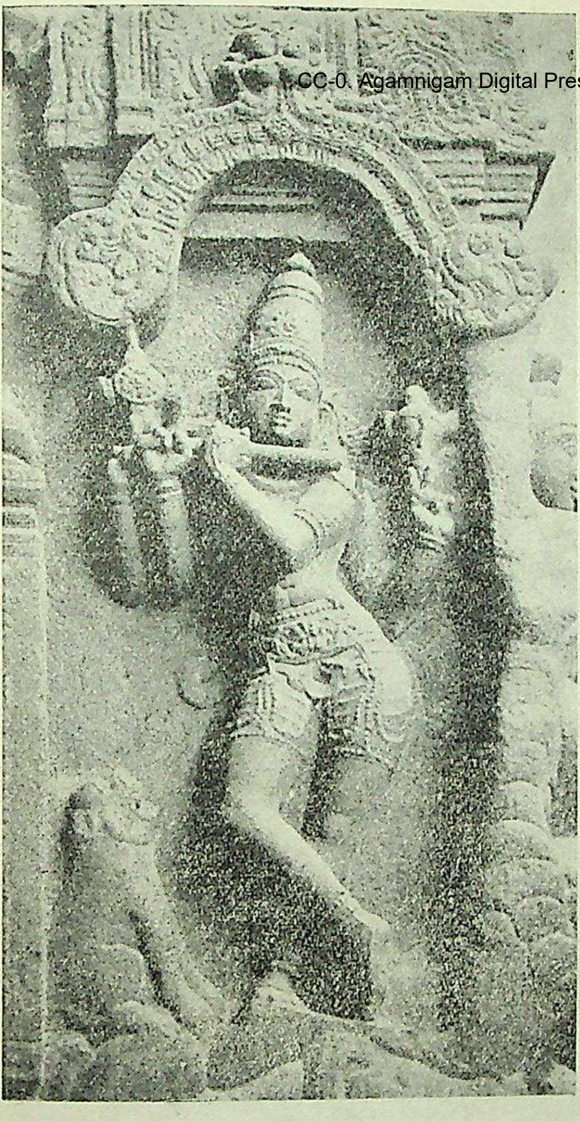
The term *sitar* is derived from the Persian name *seh-tar*. a 3-string instrument which came to India along with the didactic Persian poetry. The innovation of a 4-string *seh-tar* called *sitar* with side strings of the higher octave for resonance purposes perhaps can be ascribed to late medieval period, bordering modern period.

In early treatises on music the 3-string *veena* has been identified with different names such as *tritantri, trinari, tripari, trishavi, and trichari.*

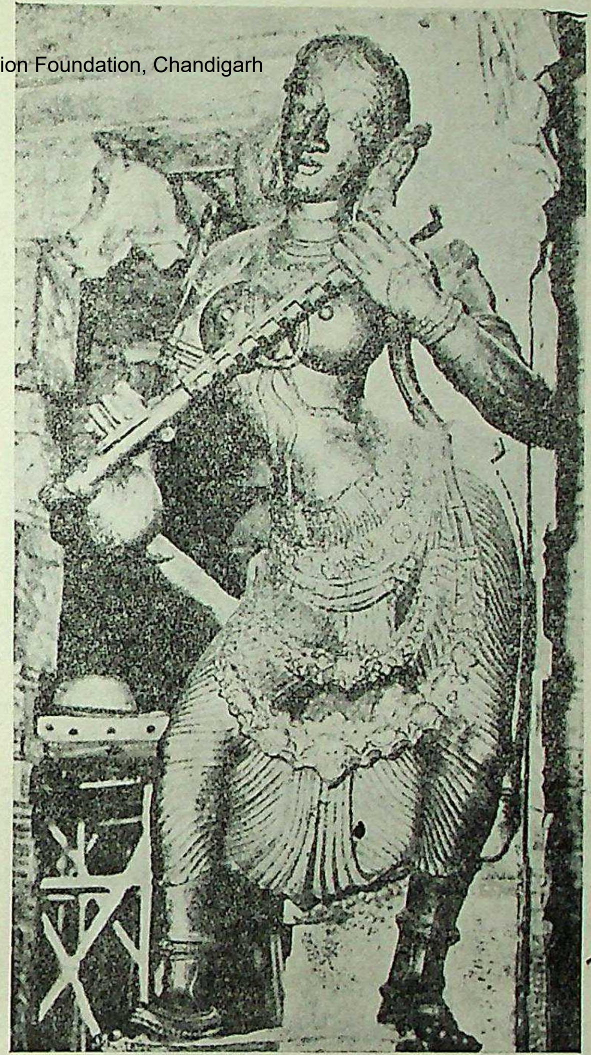
Ghulam Mohammed Khan, Babu Iswari or Babu Jan, Barkat Ali, and Ustad Yusuf Ali Khan have been some of the greatest exponents of the *sitar*. Among the celebrities in the field of the *sitar* today are the late Ustad Inayat Khan's son Vilayat Khan, Ravi Shankar, and Mushtaq Ali Khan.

SURBAHAR

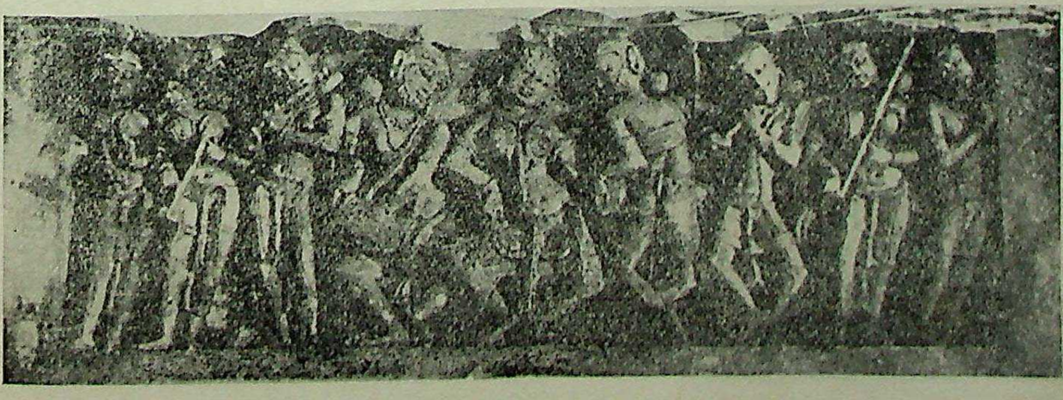
The *surhabar* is one of the most fascinating instruments of northern India. The instrument was devised about 120 years ago.



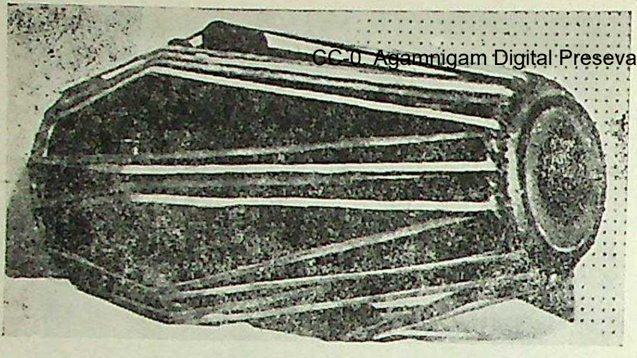
Shri Krishna playing the flute. One of his hands holds a conch (*shankh*) and the right hand displays wheel (*chakra*)—*from a panel in Ramaswami Temple, Kumbakonam (Tamil Nadu)*.



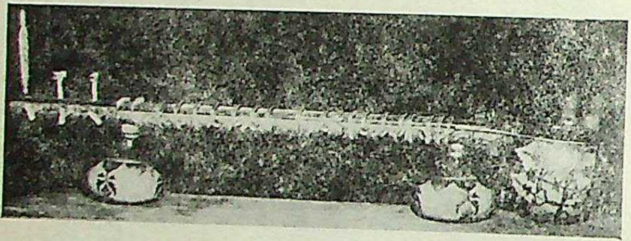
In a *tribhangi* (3 bends) pose, a *kinnari* (*she-musician*) is playing the *veena* with frets —*from Meenakshi Temple, Madurai (Tamil Nadu)*



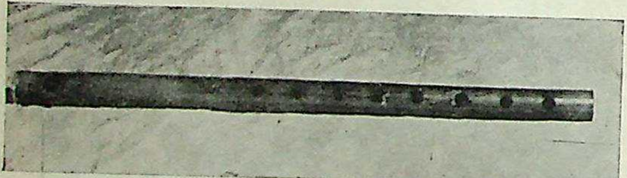
The panel shows a group of dancers and musicians. The instruments displayed are—*cymbals, veena, flute* and *drum*.



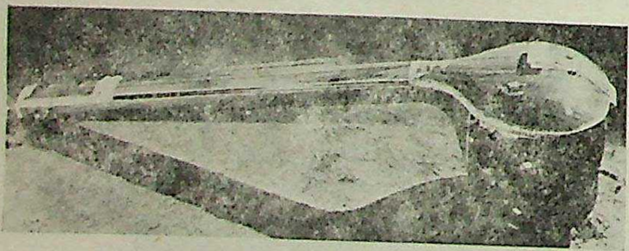
mridang



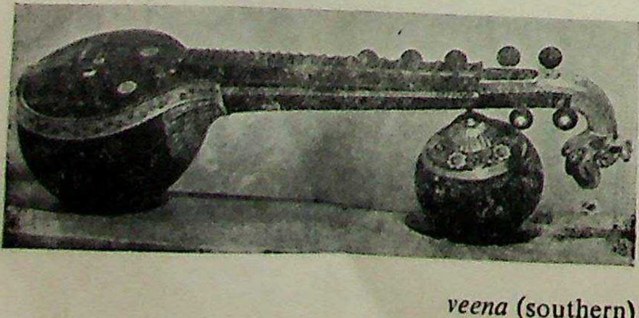
surbahar



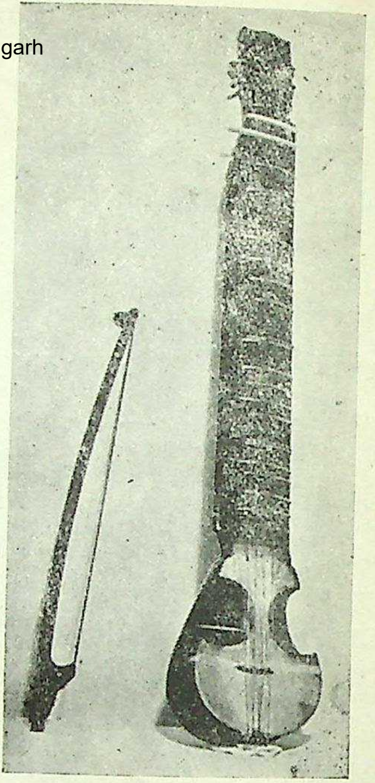
flute



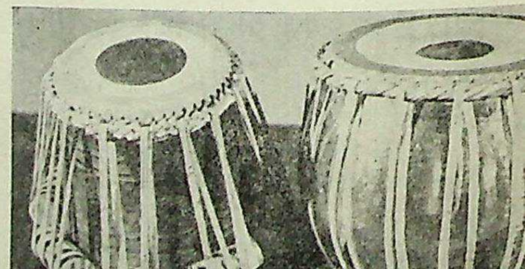
tambuar



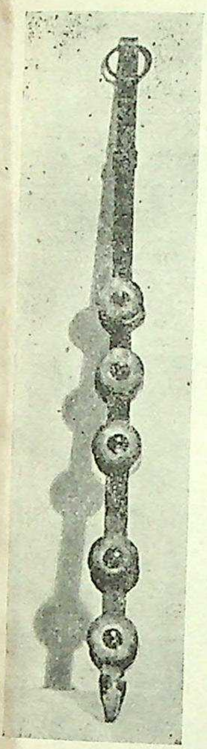
veena (southern)



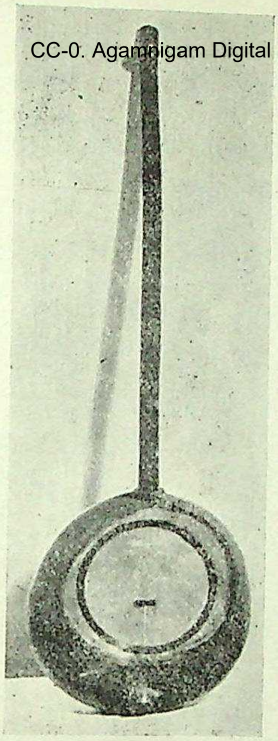
esraj



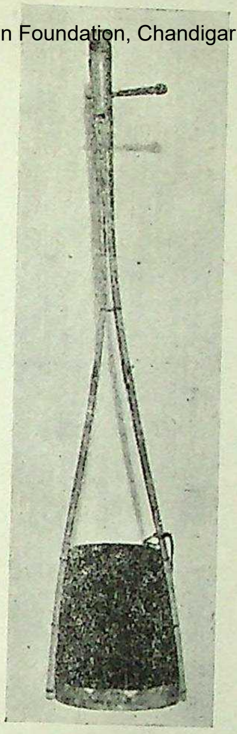
A pair of *tablas*.



chimta



ektara



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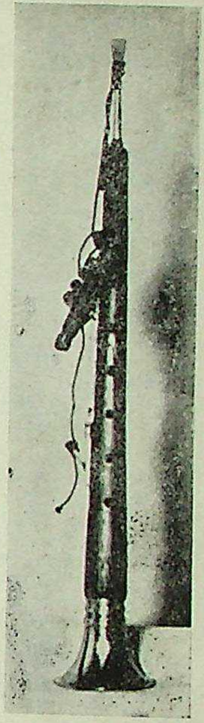
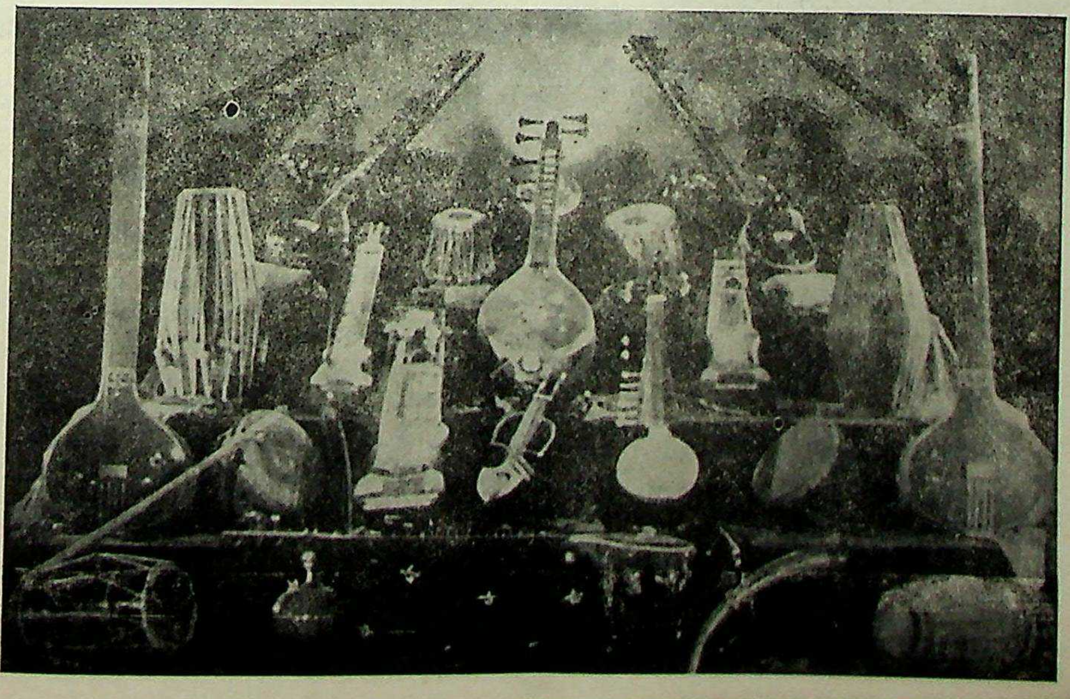
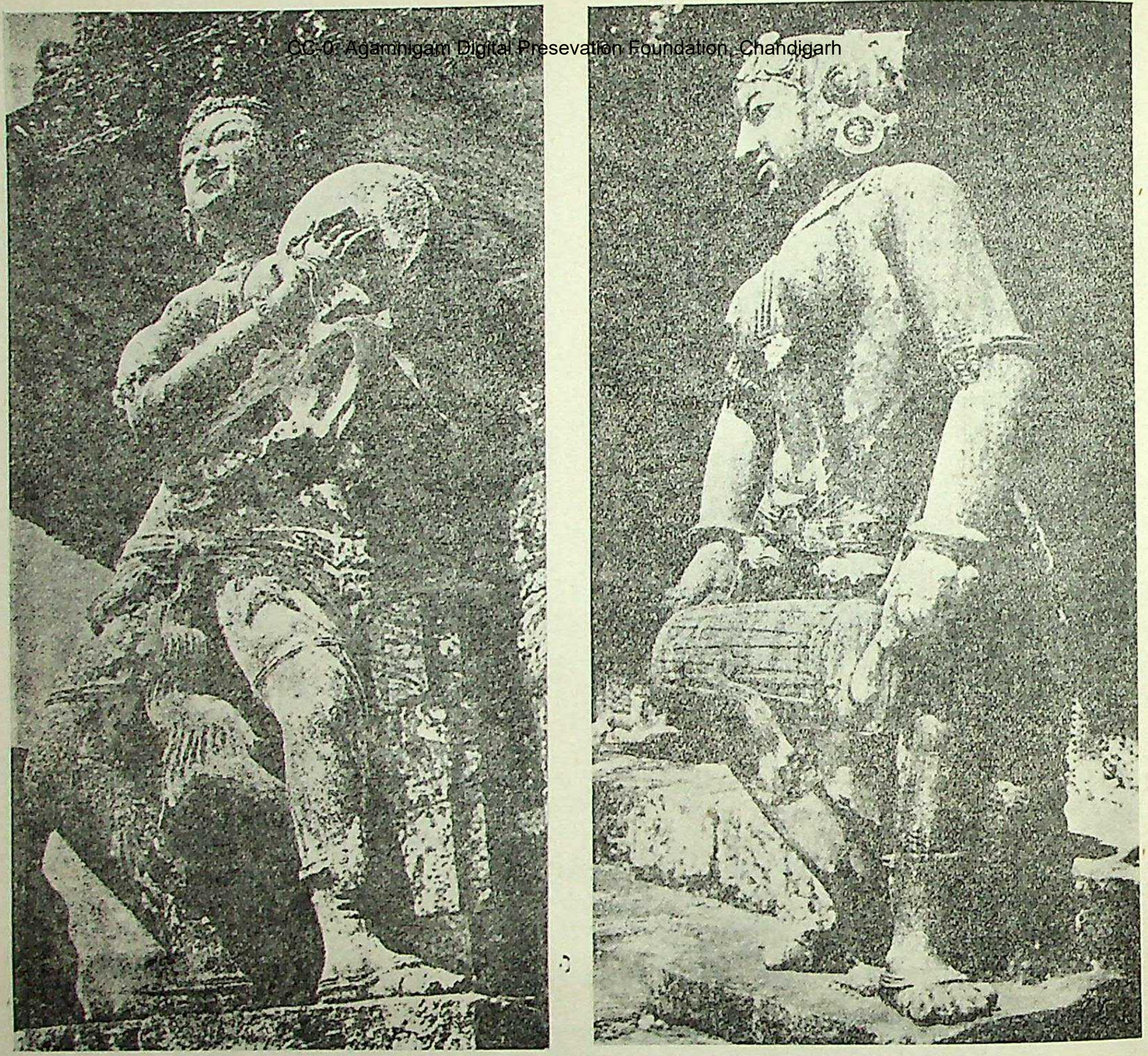


ṣhahnai

An ensemble of instruments
(Top row) : *Sitar*, a pair of *Tablas, Sitar*
(Middle row) : *Khol*, *Sarangi*, *Banjo*, *Esraj*, *Pakhawaj*
(Lower row) : *Tambura* and *Duggi*
On the ground can be seen *Dholak*, *Surbahar* and a horn





The two sculptures present

Khanjira (left) and *Dhol* (right)

The *surbahar* is actually just a large-sized *sitar*. Its body is made of wood with a flat back. Its strings are thicker than those of the *sitar* and the instrument is therefore tuned to a much lower pitch. The tuning and the technique of playing are the same as of the *sitar* but the tone is much deeper.

The *surbahar* is specially suited for playing serious classical styles of Hindustani music. The *gats* and *todas* of the *sitar* are not played on the *surbahar*. However. *alap, jod* and *jhala* in the *Dhrupad* style are commonly played. Sometimes *bols* and *jhala* of the north Indian *bin* are also played on it to the accompaniment of the *pakhawaj*.

The invention of the *surbahar* is credited to the famous *beenkar* Omrao Khan who taught the technique of playing it to his favourite disciple, Ghulam Mohammed Khan. Ghulam Mohammed Khan and his son Sajjad Hussain were both famous *surbahar* players.

There are not many masters of this instrument today. Annapurna, wife of Ravi Shankar, is a known master-player of the *sur-bahar*.

SAROD

The *sarod* is one of the most popular instruments of the stringed variety in the north. Though it is not known for certain where the *sarod* originated, it has been suggested that it is a descendant of the *rabab*, a popular instrument of West Asia. Tansen seems to have played a kind of *rabab* in Akbar's time. Though built on the principle of the *rabab* the *sarod* has a few structural modifications which make it suitable for the purpose of rendering all the subtle graces of Indian music.

The *sarod* is from 1.05 m. to 1.5 m. long and is made of wood. One end of the body is rounded, nearly 30 cm. in diameter and covered with parchment. The round part gradually joins the neck. There are six main strings including the *chikari* for the drone and rhythmic accompaniment. All the strings are metallic. They are fastened to pegs at the neck end of the instrument. Some varieties have a small gourd attached to the neck end.

The finger-board is covered with a polished metal plate to facilitate the sliding of the fingers while playing. The *sarod* has eleven or twelve sympathetic strings which help to improve the resonance. The instrument is played with a plectrum held in the right hand while the fingers of the left hand are used for stopping the strings and playing the notes.

All the characteristic styles of instrumental music namely *alap, jod, jhala* and *meend* can be rendered perfectly on this instrument. In the lower octave, the tone of the *sarod* is rich and vibrant. In the middle and higher octaves, the notes are more brightly illuminated.

The *sarod* is mainly a solo instrument. In recent years it has secured an important place in the composition of modern Indian orchestras owing to its deep and rich tone which blends easily with other instruments.

It is worth mentioning that in the ancient Greco-Buddhist art of Gandhara, an instrument of this type in a primitive form is represented. This instrument was played with long plectrums, probably made of bone or wood. This Gandhara instrument could be a precursor of the modern *sarod* and perhaps it was not imported from West Asia at all.

It is said that Khan Saheb Asadullah Khan introduced the *sarod* in Bengal more than a century ago and since then Bengal has become noted for the manufacture and popularisation of this instrument. Of late, Uttar Pradesh, Punjab and some other parts of the country have taken to this instrument.

SURSHRINGAR

The *surshringar* is a combination of three instruments of the stringed variety found in the north.

One opinion is that the *surshringar* was first made by the late Nawab of Rampur, Syed Kalbe Ali Khan Bahadur. But the more popular view seems to be that it was introduced by the famous brothers Piyar Khan. Jaffar Khan and Basit Khan who flourished in the early part of the 19th century. Great musicians in themselves, they were also directly descendants of Tansen. Mohamed Ali Khan, son of Basit Khan, who lived in Rampur and later in Lucknow, was a master of the *surshringar* and the last descendant of Tansen.

Piyar Khan taught *surshringar* to Wazir Khan, whose disciple Bahadur Husain Khan trained Prince Haider Ali of Rampur, and later his son Prince Sadat Ali (popularly called Chham Saheb). For four generations this instrument reigned supreme. It travelled to West Bengal through the late Ustad Allauddin Khan and Veerendra Kishore Roy Chaudhury of Calcutta. Today Ustad Salamat Husain Khan of Delhi is continuing this tradition which is on the verge of extinction.

The *surshringar* is a combination of three stringed instruments, namely the *mahati veena*, the *rabab* and the *kachchapi veena*. The small gourd and the neck to which the strings are attached are features of the *mahati veena*; the finger-board with the metal plate is very much like the type of *rabab* which Tansen played; and the main body is similar to that of the *kachchapi veena* popularly called the *Kaehchapi sitar*. with its flat gourd resembling to back of a tortoise.

There are six main strings which are placed on a flat bridge. There are two additional strings for the drone and the rhythmic accompaniment.

To play it, the instrument is placed in front of the performer and held in a slanting position so that the upper portion rests on the left shoulder. The strings are plucked with wire plectrums (*mizrabs*) worn on the fingers of the right hand and the notes are held with the fingers of the left hand. The polished metal plate on the finger-board facilitates the sliding of the fingers thus making it easier to produce the *gamakas* and other graces of Indian music.

The *surshringar* is restricted to serious types of music, mainly the Dhrupad and Dhammar styles. After playing the *alap* of the *raga* in *vilambit, madhya* and *drut laya* (slow, medium and fast tempo), the performer usually ends the recital with varieties of *jhalas* played to the accompaniment of the *pakhawaj*.

The *surshringar* is a difficult instrument to practise upon and hence is not popular. However there are a few masters in the north who maintain the tradtional style of playing this instrument.

VICHITRA VEENA

Of all the modern stringed instruments in vogue in India, the *vichitra veena* seems to be one of comparatively recent origin. It is used mostly in the north and is a rare instrument.

In general appearance and structure, the *vichitra veena* is very similar to the northern *bin* or *veena.* For an instrument so young, it is fairly widespread. The main difference between the northern *veena* and the *vichitra veena* is that the former is a fretted instrument with a bamboo stem while the *vichitra veena* has a much broader and stronger wooden stem without frets which can accommodate the large number of main and sympathetic strings. This hollow stem, about 0.9 metre long and about 15 cm. wide, with a flat top and a rounded bottom, is placed on two large gourds about 45 cm. in diameter. An ivory bridge covering the entire width of the stem is placed at one end. Six main strings made of brass and steel run the whole length of the stem and are fastened to wooden pegs fixed to the other end.

The *vichitra veena* has about twelve sympathetic strings of varying lengths which run parallel to and under the main strings. They are usually tuned to reproduce the scale of the *raga* which is being played

The *vichitra veena* is played by means of wire plectrums (*mizrabs*) worn on the fingers of the right hand which pluck the strings near the bridge. The notes are stopped with a piece of rounded glass, rather like a paper weight. The musician slides the glass piece over the strings from one note to another by holding it in his left hand. It is rather difficult to play fast passages on the *vichitra veena* but slow passages emerge on this instrument with a beauty and richness of tone which few other instruments possess.

The obvious disadvantage of this instrument is that a paper weight can never do what human fingers can. And so, some of the delicate graces and embellishments in very fast passages have to be sacrificed. The *vichitra veena* has these advantages in common with the *gottuvadyam* of the south.

It is said that the *vichitra veena* or *batta-bin* was introduced by the late Ustad Abdul Aziz Khan who was a court musician at Patiala till Independence. In fashioning the instrument, Ustad Abdul Aziz Khan, during his musical contacts with the south, probably took his ideas from the southern *gottuvadyam* which was already popular. Today Gopal Krishna of Delhi plays it admirably well.

GOTTUVADYAM

The *gottuvadyam* is one of the important concert instruments of the stringed variety in the south. It is similar to the southern *veena*, the main difference being that unlike the *veena* it has no frets.

The pear-shaped bowl of the *gottuvadyam* is scooped out of a block of wood. While the northern *vichitra veena* is built on the same principle as the *gottuvadyam*, the heavier body of the latter gives a deeper and rounder tone than the *vichitra veena.*

The *gottuvadyam* consists of six main strings which pass over the bridge placed on the top of the bowl. There are three side strings for the drone and rhythmic effect. The instrument is also provided with a few sympathetic strings which pass over a small bridge beneath the main bridge.

The music is played by moving a cylindrical piece of heavy polished wood or horn over the strings. The *gottuvadyam* has a range of four to four and a half octaves. *Raga alapana*, *tanam*, *pallavi* and all other musical forms that are possible on the southern *veena* can be rendered on this instrument. Most of the *gamakas* and graces can be brought out beautifully.

The *gottuvadyam* is primarily an instrument for solo playing. It has been in vogue in southern India for the past 80 or 90 years. It was brought into vogue by the famous musician Sakharam Rao of Tiruvidaimarudur, a village on the banks of the river Kaveri. It was further popularised all over India by a palace musician of Mysore, Narayana Iyengar, who used to call the instrument *mahanataka veena*.

Tanjavoor in the south is noted for the manufacture of this instrument which is produced there with elaborate ornamentation and silver mounting.

RABAB

The *rabab* is a popular stringed instrument of the plucked variety found in West Area. The Indian *rabab* is used principally in Kashmir, Punjab and Afghanistan.

The instrument is made of wood. It has a double belly, the first being covered with parchment and the second with wood. There are four strings ; the two upper strings are sometimes doubled in which case the instrument has six strings. A number of sympathetic strings of metal run beneath the main strings. There are four or five frets made of gut tied round the fingerboard at semitonic intervals and the instrument is played with a plectrum. The tone resembles that of a banjo and no *meend* or glissando is possible on this instrument.

It appears that the Indian *rabab* exercised considerable influence on the history of stringed instruments in the West, since it was through it that the bow was introduced to the West. The *rabab* became the *rebec* of Persia and Arabia to which the parentage of the violin family is ascribed. The peculiar shape of the violin and viola ,for instance, very nearly resembles that of the *rabab*. The shallow pinched belly of the *rabab* was apparently designed to facilitate bowing though the Indian *rabab* still remains a plucked instrument.

It is popularly believed that Tansen used to play a kind of *rabab*. The disciples of Tansen divided themselves into two groups, the *rababiyas* and the *binkars*. The former used the *rabab* while the latter used the *bin*.

Among the great *rababias* were Piyar Khan, Bahadur Khan and Bahadur Sain.

SARANGI

The *sarangi* takes prominent place as an accompaniment to the main artist in a vocal music concert in the north. It is suitable both for solo playing and for aecompaniment. It is easy to produce all types of *gamakas* on this instrument. In fact it is said to be closest to the human voice.

The *sarangi* is about 61 cm long. It is made by hollowing out a single block of wood and covering it with parchment. A bridge is placed on the belly in the middle. The sides of the *sarangi* are pinched to facilitate bowing. Four tuning pegs are fixed to the hollow head, one on each side. The instrument usually has three main strings of gut of varying thickness. Rarely, a fourth string made of brass is used for drone.

When played, the *sarangi* with its head uppermost is placed in the lap of the performer. The herald rests against the left shoulder. It is played with a horsehair bow which is held in the right hand. The fingers of the left hand are used for stopping the strings. While this is being done, the fingers do not press the string down on the finger-board as in the case of the violin but press against the strings at the sides.

Modern *sarangis* generally have thirty-five to forty sympathetic strings running under the main strings. These are fastened to small pegs on the right side of the finger-board and also on the top of the head. The sympathetic strings are tuned according to the scale of the *raga* played and are made of brass and steel.

Experts are of the opinion that the *sarangi* as we know it today first made its appearance as late as the 17th century. It never seems to have been used in the Mughal courts. There is no mention of it in the *Ain-i-Akbari*. It has all along been a folk instrument used by the common people for their simple music.

Other members of the *sarangi* family are the *dotara*, the *chartar*, the *dhap sarangi* of Punjab, and the *chikara* of Uttar Pradesh. These folk instruments are simple in construction. They are often suspended in front of the body and played with bows to which bells (*ghunghurus*) are sometimes attached to give a rhythmical jingling sound with the music.

Various names like *saranga*, *sarangi* and *saranga-veena* are mentioned in ancient works like *Sangita Ratnakara*, *Basavapurana*, *Panditaradhyacharitra* of Palkuriki Somanatha (12th century), *Sangita Darpana* and others. There is reason to believe that the *sarangi* must have remained a folk instrument for centuries before it was considered suitable to accompany the new styles of music that came into vogue in the 17th century.

The *sarangi* seems to have been used in the south also at some time or other but it was subsequently superseded by the violin. The facilities it offers by playing the various *gamakas* and graces characteristic of Karnatak music have made the violin completely a southern instrument.

VIOLIN

Today, the violin has become an integral part of any musical concert of Karnatak music where it accompanies the main artiste, vocal or instrumental. The violin as we know it is one of the earliest foreign instruments to be adopted by Indian music. The introduction of this instrument to this country dates back to over a century ago. It is said that Varahappaya, a minister to the Maratha rulers of Tanjavoor and an adept in Karnatak music, was first attracted by the rich tonal quality of the violin which he heard in a European band of the East India Company. He explored the possibilities of this instrument from the point of view of enriching Indian music.

Though the violin is a Western instrument, in southern India it is not tuned in the Western style; nor does the artist play it standing. He squats on the platform and holds the violin between his right heel and chest. The left hand moves freely and the fingers of the player have a range of two and a half octaves. The range of the human voice is almost the same and the tone of the violin blends smoothly with that of the human voice.

The violin is remarkable for its smooth sweeps from one end of tne string to the other. The light tone of the steel string and the deep, almost human tone of the fourth string are wonderfully expressive. All these and the facility to play the *gamakas* and embellishments peculiar to Indian music, especially to Karnatak music, have made the violim irrevocably Indian.

Some experts in the West are of the opinion that the violin has an Indian ancestry and trace the gradual evolution of the instrument to one of the many varieties of bowed instruments found all over India which are of great antiquity. One such variety is the famous *ravanhatho* (*ravanahasta* or *ravanastram*), a folk instrument of the stringed variety which is still used in some regions of Gujarat and Rajasthan.

There has been a successive line of musicians in the south who have effectively demonstrated the possibilities of the violin as an accompanying and solo instrument. Two notable names are those of Tirukodikaval Krishna Iyer and Tiruchirapalli Govindaswami Pillai, towering personalities within recent memory with distinctive styles and a technique which remains unsurpassed till today. Dwaram Venkataswami Naidu and T. Chowdiah were two other noted exponents of violin music.

Northern India has a number of stringed instruments of the bowed variety like the *sarangi*, the *dilruba*, and the *esraj* which serve as an intimate accompaniment to vocal music. The violin has begun receiving respect at the hands of north Indian musicians too.

The certenarian Ustad Allauddin Khan of Maihar was a versatile player of the violin. Among the living exponents are V. G. Jog and Gajananrao Joshi.

DILRUBA

The *dilruba* is one of the most popular stringed instruments of the bowed variety in the north. The instrument is a clever combination of the *sitar* and the *sarangi*. The finger-board with the frets very much resembles the *sitar*. The belly of the instrument is covered with skin like a *sarangi* ; and like the *sarangi* it is played with a bow.

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1. See, *Indian Origin of the Violin*. Journal of the Music Academy, Madras, vol. XIX pp. 65-70; also pp. 58-64.

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The stem of the *dilruba* contains eighteen or nineteen elliptical frets which are movable. They are tied to the stem by means of thin pieces of gut so that the frets can be moved according to the scale of the *raga* which is being played, as in the case of the *sitar*. The bridge is placed on the skin-covered body, over which all the main and sympathetic strings pass. Of the four main strings, the last is the principal playing string. The first two are of brass and the last two of steel. There are about twenty-two sympathetic strings or *tarabs* running underneath the frets and fastened to a series of pegs on the side. Like sympathetic strings in other instruments the *tarabs* are tuned to reproduce the scale of the melody which is being played.

The bowing is done with the right hand while the fingers of the left hand are used to play glide over the strings. The frets on the *dilruba* are meant only to guide the player in locating the the correct position of the notes, The fingers do not pull the strings over the frets laterally as in the *sitar*, but more longitudinally alongside the strings. All the musical nuances which the *sarangi* captures can be produced on this instrument without difficulty. The *dilruba* can be an effective accompaniment to vocal music as well as an instrument for solo performances.

The *dilruba* is held vertically, the lower portion in the lap of the performer or in front of him and the top resting against the left shoulder.

Simple melodies and the subtlest musical nuances can be produced on this instrument with equal naturalness. It is a popular instrument in the north especially in Punjab, Uttar Pradesh and Maharashtra. It has also secured for itself a place in the modern Indian orchestra.

The *dilruba* came into vogue after the fretted *sitar* gained popularity.

ESRAJ

The *esraj* also belongs to the family of the *dilruba*. It is very similar to the *dilruba* both in appearance and in the technique of playing. However, there are few structural differences.

The body of the *dilruba* is rectangular and flat like that of the *sarangi*. The body of the *esraj* is a bit rounder in shape and shallower in the middle.

The stem or the finger-board of the *dilruba* is broader than that of the *esraj*.

The number of sympathetic strings in the *dilruba* is larger than in the *esraj*: hence the tone of the *dilruba* is more rich and resonant than that of the *esraj* whose tone is soft and mellow.

The *esraj* is a very popular instrument of Bengal where it is commonly used by both professionals and amateurs. The *esraj* can be played by itself or as an accompaniment.

MANDAR BAHAR

The *mandar bahar* is very similar to the *esraj* in construction but the finger-board and the body are bigger in size, being about 1.22 metre long. Thick strings of gut are used which give a deep, rich tone somewhat like that of the occidental violincello.

To play the instrument the performer sits on a low stool. The instrument is placed in front of him on the floor, the top of the instrument leaning against his left shoulder.

The *mandar bahar* is a rare instrument found mostly in Bengal. It is now being used in the modern Indian orchestra for producing bass notes in the lower octaves.

SANTUR

In appearance the *santur* is a rectangular box over which strings of varying length are stretched. The long side of the rectangle faces the performer and the strings run parallel to the longer side. Unlike the *swaramandal* which has only one string to a note, the *santur* has generally a set of three strings to a note. The length and the thickness vary according to the octave ; the strings are thickest in the lower octave. Its speciality, which distinguishes it clearly from the *swaramandal* is its method of note production. In the *swaramandal* the strings are plucked by the fingers, whereas in the *santur*, the strings are subjected to pressure strokes by small wooden hammers held in both the hands. The same principle is applied in the makings of the modern pianoforte where the strings are struck by mechanical keys.

The disadvantage is obvious ; when the strings are struck, the sound of the notes lingers on and cannot be controlled.

The *santur* is popular in West Asia. In India, it is special to Kashmir where the instrument is used for accompanying a type of classical music called *Soofiana Kalam,* along with other instruments of the region like the *saz* the *rabab*, the *sitar*, the *sarangi*, the *tumbaknari*, and the *ghata.*

FLUTE

One of the earliest instruments of the *sushira* (wind) variety is the flute. The flute has various names such as *bansuri, venu, vamshi, kuzhal, murali* and so on. Under the names of *tunava* and *nadi*, the flute was used in the Vedic period. It is one of the three celebrated musical instruments of India, the other two being the *veena* and the *mridanga.*

In ancient India, the flute was very commonly used in the religious music of the Buddhists. Representations of this are found in Indian sculpture from the beginning of the lst century B.C. at Sanchi, and later on in Greco-Buddhist plastic art at Gandhara. The sculptures at Amaravati and several frescoes and paintings at Ajanta and Ellora also depict the flute, as played by human and celestial beings, both as accompaniment to vocal music and as a part of instrumental ensembles.

The flute is of very great antiquity. For centuries the construction of the flute has remained more or less constant. The instrument is a simple cylindrical tube, mostly of bamboo, of uniform bore, closed at one end. There are different kinds of flutes and their lengths and number of holes vary. The length can be anything from 20 to 75 cm. Long flutes have a rich, deep and mellow tone whereas in small flutes the tone is bright and high pitched.

In addition to the mouth hole, there are six to eight holes arranged in a straight line. The range of the flute is about two-and-a-half octaves. It seems incredible that such a wide range of notes can be produced from only six to seven holes.

The player blows into the mouth hole, thus settlng in vibration the column of air inside the tube. The lowest octave of the scale is produced by altering the effective length of the tube by covering the holes with the fingers. The next octave of the scale is produced in the same way but with increased wind pressure and the third octave is produced in a more complicated way by 'cross fingerings', The tone colour varies considerably. The first octave is so thick and deep that it is sometimes mistaken by the listeners for the tone of a clarionet. The second octave is smooth and clear and the third bright and penetrating. The player can produce any interval by only opening or closing the available holes with his fingers.

The flute is held in a horizontal position with a slight downward inclination. Where the two thumbs are used to hold the fiute in position, the three fingers of the left hand, excluding the little finger, and the four fingers of the right hand are used to manipulate the finger holes.

Some of the bamboo flutes used in the north, especially in West Bengal, are longer than those used in the south. The horizontal flute is enormously popular in southern India and Bengal. Vertical flutes are more popular in the north and the west. These are held vertically and played through a mouthpiece.

The flute is very commonly used in western orchestras. The flute used in western music is cylindrical in shape and is made of wood but with a more or less conical head. The finger-holes are large so as to afford greater power and range of expression. The fixing of mechanical keys on the flute is an improvement which has revolutionised flute-playing in Western countries. The flute is one of the many Indian musical instruments which went West and became domiciled there.

The flute is an instrument which can be played by itself. It is also an important constituent of the modern Indian orchestra. The flute has produced some very great virtuosos both in the north and the south. Among the veterans were Polladam Sangeeva Rao and Pannalal Ghosh.

SHAHNAI

The double-reeded instruments belonging to the *sushira* (wind) category are among the most ancient and the most widely-known musical instruments in the world. They have been used all over the world for open-air festivals, processions and so on. The *shahnai*, is no exception to this. The oboe of the West, which is similar to the *shahnai*, has developed into an instrument for chamber music, but the *shahnai* remains to this day essentially an open-air instrument. It is used on ceremonial occasions and is thought of as a *mangala vadya* or auspicious instrument.

The *shahnai* is a tube that gradually widens towards the lower end. It usually has eight or nine holes, the upper seven of which are used for playing. The remaining are either stopped with wax or kept open. This is left to the discretion of the peformer since the purpose is to regulate the pitch of the instrument.

The instrument is made of dark, close-grained blackwood and has a metal bell fixed to the broader end. The length of the instrument is 45 to 60 cm. The reed is fixed at the narrow blowing end. It is said that the reed used in the *shahnai* is made of *pala* grass which is cultivated in some regions of Uttar Pradesh. Spare reeds and an ivory needle with which the reeds are adjusted are attached to the mouthpiece.

The seven holes in the *shahnai* would appear to give it a very limited scope of expression. But actually the way the lips and tongue play upon the reed mouthpiece and the manner in which the holes are opened or closed with the fingers render the *shahnai* a most sensitive instrument which expresses, very effectively and attractively, with all their semitones and quarter-tones, the chromatic passage of which Indian music is so full.

Shahnai playing is a very complicated technique. The half-tones and quarter-tones are produced not only by partially closing and opening the finger-holes, but also by adjusting the pressure of air in the pipe. This is a laborious process and consequently it takes a long time for a musician to attain proficiency in this instrument. The *shahnai* when played is always accompanied by a drone called the *shruti*. This is another instrument which is like the *shahnai* in appearance but has only two or three holes which are stopped wholly or partly with wax in order to tune the drone to the desired pitch.

The accompanying percussion instrument is a pair of *naqqaras* called. *dhukad*, one smaller than the other. The smaller one is called the *zeel* and the bigger one the *dhoomas*. They are generally played with sticks in both hands if the music is performed in the open air, but in a concert they are played with both hands.

The name *shahnai* seems to be of Persian origin. *Nai* is a blowing instrument of a type which is depicted on ancient Egyptian tombs dating from 3000 B.C. The *nai* was a reed instrument "with six holes yielding soft melodious tones, commented upon very favourably by the historians" according to one Atiya Begum. It is said that when an expert player on the *nai* played his instrument to the great delight of the king of Persia, the instrument came to be called *nai-i-shah, shahnai* or the flute of royalty.

The Indian *shahnai* seems to have been introduced by the Muslims and the *Ain-i-Akbari* makes mention of the name of Ustad Shah Mohamed as an expert *shahnai* or *surnai* player. The *naubat-khana* of Akbar used nine *shahnais*.

The *shahnai* is an exacting instrument; yet it has produced some very great virtuosos. Modern experts on the *shahnai*, with their clear technique and fine sense of tone, have brought to this instrument a smoothness of tone comparable to that of a stringed instrument.

NAGASWARAM

The music of India originated in her temples. Even now, temples and religious institutions in the south support and maintain musical ensembles of various types, vocal and instrumental. The latter includes the *nagaswaram*, (also called *nadaswaram*), and drums and pipes which form an integral part of certain religious services.

The *nagaswaram* of the south and the *shahnai* of the north are of the same family and in general appearance look very much alike. The *nagaswaram* is a double-reeded instrument with a conical bore that flares out towards the bottom end. It usually consists of twelve holes, the upper seven of which are used for playing. The other five called *brahma swaram*, are stopped with wax at the discretion of the performer so as to regulate the pitch. The reed is fixed on a metal staple and mounted on the top whereas in the *shahnai* the reed is directly introduced into the hole of the blowing end of the instrument. The reed used in the *nagaswaram* is found on the banks of the Kaveri in south India.

The length of the *nagaswaram* is 60 to 75 cm. The body is usually made of wood, but occasionally one comes across instruments covered with silver and even gold. The accessories to the *nagaswaram*, spare reeds and an ivory needle with which the reeds are cleaned and adjusted, are attached to the mouthpiece.

All the different styles and subtle graces of Karnatak music can be effectively brought out on this instrument, not only by the partial opening and closing of the finger-holes, but also by the manipulation of the lips and tongue upon the reed.

There are two varieties of *nagaswaram*—one is called the *bari* type and the other the *timiri* type. The former is a slightly bigger one and experts as a rule use it in preference to the *timiri* type.

The *nagaswaram* when played is always accompanied by the *shruti* which is called *ottu*. This instrument is similar to the *nagaswaram* but slightly bigger in size with five or six holes at the lower end. These holes are wholly or partly closed to tune the drone to the desired pitch.

The accompanying percussion instrument is called *tavil* in Tamil and *dolu* in Telugu. This instrument is special to the *nagaswaram* and ideally suited to open air performances. In addition to the *tavil*, the *talam*, which are cymbals made of bell metal are used to keep time.

The *nagaswaram*, being especially an outdoor instrument, is employed on all festive occasions whether domestic or public religious or ceremonial. It is also used in processions and in temple music. The repertoire of the player is large and varied and there are melodies suitable for processions in honour of temple deities, for the celebration of marriages, for rejoicings, for welcoming, for departures and even for funerals.

It is noteworthy that during a *nagaswaram* recital the *tavil* and the *talam* (the drums and the cymbals) are subdued during the *raga alapana* ; however, the *tanams* of the *alapana* are interspersed with bright passages on the *tavil*.

The music played on the *nagaswaram* is usually of a pure and serious type. However, the instrument is also very largely used in folk music and the temples of the village deities during festivals.

Epigraphical and literary evidence suggests that the *nagaswaram* was well known in the 15th, 16th and the 17th centuries. There is reason to believe that the *nagaswaram* has evolved from the snake charmer's *pungi* or *magudi*. The *pungi* consists of two pipes ; one gives a continuous drone while the other plays the melody. It is possible that the two pipes were separated at a later date.

Because of its great volume and power, the *nagaswaram* is essentially an outdoor instrument and does not sound so pleasing at close range. However, at a distance, the effect is greatly subdued and in the open air, the strains of the *nagaswaram* often attain a wild beauty and softness. It is an exacting instrument, but it has produced some very great virtuosos. One of the greatest exponents of the *nagaswaram* in recent years was the late Tiruvaduthurai Rajaratnam Pillai.

JALTARANG

There are in India a number of instruments made of porcelain, wood, metal, glass, leather, etc., which are effectively used in playing classical music. To such a variety belongs the class of instruments called *jaltarang, kasht-tarang, kanch-tarang* and so on.

Jaltarang literally means 'water waves'. It consists of about eighteen porcelain cups of different sizes, each possessing a distinctives tone. The cups are arranged in a semi-circle in front of the performer, from the biggest to the smallest, beginning from the left. The empty cups when struck with a small stick give notes of different pitch; the bigger cups produce a deep, low sound and the smaller ones emit high-pitched notes.

Usually water is poured into the cups and the rims of the cups are struck with two slender sticks held in both hands. The more water there is in a cup, the lower is the pitch. As the water is poured out, the pitch is raised. Delicate graces and nuances are produced by bringing the stick in contact with the water in the cup. The tuning of the various cups generally takes a long time and the cups are so arranged that the pitch rises from left to right.

The *jaltarang* is played by itself, only in fast tempo. In the north, *gats* of the *sitar* are played on this instrument. No *alap* of a contemplative nature requiring *gamakas* and *meends* is possible on the *tarang* variety of instruments.

In the south, the *jaltarang* enjoys the status of a concert instrument and performances on this instrument are accompanied by the violin and the *mridangam*. All musical compositions of medium and fast tempo can be played effectively on this instrument.

The names of Jalatarangam Subbiar and Avidayarkoil Harihara Bhagavathar may be mentioned among the virtuosos of this intrument in the south.

KASHTH-TARANG

The *kashth-tarang* is nothing but a graduated series of flat, hard wooden bars, about twenty in number, arranged parallel to each other. Beginning from the biggest bar at the extreme left end, the pitch gradually increases from left to right. Each bar is tuned to a note in the scale. The bars are mounted on a wooden frame and the instrument is played by striking the bars with two small wooden beaters or hammers held in both hands.

The *kashth-tarang* is meant for solo playing in fast tempo. Owing to its characteristic tone colour, it is being extensively used in the modern orchestra.

The nearest equivalent to this instrument is the Western xylophone.

KANCH-TARANG

The *kanch-tarang* is also called *mukur-tarang*. The general appearance, construction and technique of this instrument is almost like that of the *kashth-tarang* with this difference that the bars of the *kanch-tarang* are made of glass while those of the *kashth-tarang* are of wood.

The glass plates are arranged parallel to each other beginning with the largest plate and ending with the smallest. Each plate is tuned to a definite note of the scale. The range of this instrument is about two-and-a-half octaves. It is played with two sticks held in both hands and the tone is decidedly more brilliant, clear and pleasing than that of *kashth-tarang*.

The manufacture of this instrument and its popularity are limited to northern India.

MRIDANGA

The *mridanga* is perhaps the most highly developed and the most ancient of all percussion instruments. It is commonly used in the south as an accompaniment to the vocal and instrumental performances. The name *mridanga* literally means 'body of clay'.

The *pakhawaj* of the north is also called *mridang*. The day drum of West Bengal and Manipur which is largely used in dances, *kirtans* and songs of the devotional class is also called *mridang* although it is more popularly known as *khol.*

The southern *mridangam* is hollowed out of a block of wood. It is cylindrical in shape and 45 to 60 cm. in length. Skin covers, stretched tight over both the openings, are fastened to leather hoops held taut by interlaced leather braces which pass along the length of the *mridangam*. In between the braces and the wall of the instrument are wedged round blocks of wood which can alter the pitch of the instrument if pushed up or down.

Usually some dough is applied in the middle of the skin covering on the left side of the drum to add to its resonance capability and to enable it produce full bass sound by lowering the tone to the desired pitch. The plaster is carefully scrapped off each time after use. Generally the two heads are tuned an octave apart. The centre of the right side has a permanent coating of a black substance called *siyahi* (*soru*, *karanai* and *marundu* in Tamil) which is a mixture of boiled rice, manganese dust, iron filings and other substances. It is this black layer that gives its characteristic tone to the *mridangam* and facilitates tuning to a particular pitch.

A wide variety of tones is obtained from different parts of the instrument in various ways. For instance, the head can be struck with a full hand or with the fingers, which are clamped or released. The parts of the head which are struck are the rim of the wall on the right side over which the straps pass, the drum head around the black 'eye' and the eye itself. The types of strokes are distinguished by an elaborate percussion terminology (*jatis*). The alternation of sound between the two heads of the *mridangam* further enriches the tone.

The fingers of the *mridangam* player are extraordinarily supple, but at the same time invested with a curious power. It takes very long and arduous training to become a good *mridangam* player.

There are two distinct styles of accompaniment. One is for the *mridangam* player to follow the principal artiste so closely that the melody can almost be deduced from its rhythmic counterpart. The other, more traditional style is one in which the drummer does not attempt to follow the melody too closely but artfully deviates from the normal cycle into elaborate and intricate cross rhythms so that much suspense builds up before the rhythm cycle ends in a grand finale. In this way the character of the particular *tala* being used is fully brought out.

In the south, the *mridangam* is used as an instrument of accompaniment but in every recital of classical music, vocal or instrumental, there is a short solo piece on the *mridangam*. This often comes after the elaboration of the *pallavi*, the central piece of any concert or at the end of one of the compositions chosen for elaborate rendering. Here the *mridangam* improvises on the *tala* of the *pallavi* giving particular attention to the shape of the melody that has preceded it.

PAKHAWAJ

The *pakhawaj*, which is also called *mridanga*, belongs to the north and is almost similar to the *mridangam* of the south except for slight differences in construction and technique of playing. The left side is more or less the same in both the regions, but the right side, though designed on the same principles, is quite different in the distribution of the prepared parts. The quality of the leather as well as the tension of the surface are quite different. The cylindrical blocks of wood inserted between the braces and the wall of the *pakhawaj* are bigger than those of the southern *mridangam*.

A mixture of flour and water is applied to the left head of the *pakhawaj* which lowers the pitch and gives a dull, bass sound. This plaster is always scraped off after use. *Siahi* is applied on the skin covering. It is a plaster of different ingredients mixed with iron filings.

The main difference in the style of playing between the northern *pakhawaj* and the southern *mridangam* is that whereas the left side of the *pakhawaj* is played with the open left hand, southern musicians use the left side of the *mridangam* in much the same way as *tabla* players use the *bayam* or the left piece of the pair.

Although the *pakhawaj* is a highly developed percussion instrument of the north, it has more or less been superseded in popularity by the *tabla*. The use of *pakhawaj* is confined to severely classical types of compositions like Dhrupad and Dhammar. It is also used for accompanying instruments like the *bin* (northern *veena*), the *surshringar* and the *surbahar*, when played in traditional styles. The various rhythmic strokes of the *pakhawaj* are also distinguised by a distinctive terminology (*bols*).

The name *pakhawaj* seems to have been derived from the *awaj*, a kind of drum used during the Mughal period and described as "two kettle drums joined together at the reverse ends, their heads covered with skin and braced with thongs," The *awaj* is mentioned in the *Ain-i-Akbari*. The *pakhawaj* was very popular during the Mughal period when it was used as an accompaniment to vocal music, to instruments like the *bin* and the *rabab* and also to dancing. Pandit Ayodhya Prasad of Rampur and Baba Ram Shankar Pagaldas of Ayodhya are the noted living exponents of the *Pakhawaj*.

TABLA

The *tabla* is the most widely used percussion instrument in the north. Although the *pakhawaj* (also called *mridang*) is the most ancient of all percussion instruments it has been more or less superseded by the *tabla*. The *tabla* constitutes a vital part of Indian music, especially in the north. No concert, either vocal or instrumental, can take place without a pair of *tablas*. The *tabla* player does not have to adapt his time measure to the needs of the principal artiste. On the contrary, the main ariste must take cognizance of the relentless beats of the *tabla* which give a continuous and explicit version of the rhythm cycle the artiste has chosen for his performance.

The *tabla* can be conceived of as the *pakhawaj* in two pieces. It is believed to be another innovation, next only to the *sitar*, during the period of Amir Khusrau. The name *tabla* appears to have been derived from an Arabian drum, called *tabl*.

The *tabla* consists of two drums, the *bayan* or the one played with the left hand and the *dayan* or the one played with the right hand. The *bayan* is made either of clay or copper while the *dayan* is usually hollowed out of a block of wood. Both are covered with skin fastened to leather hoops which are stretched over the body of the drum by means of leather braces. Cylindrical blocks of wood are wedged between the braces and the wall of the *tabla*. These wedges can be pushed up or down to lower or raise the pitch. Like the two heads of the *mridanga*, the two pieces of the *tabla* are generally tuned one octave apart.

The *tabla* is not played with the open hand like the *pakhawaj*. A variety of tonal effects can be obtained by varying the manner of striking as well as the parts of the head which are struck. For instance, the full hand can be used, or just the fingers. The fingers can be clamped over the struck head and then released. A most expressive sound is produced by striking the centre of the *bayan* with the full hand or the tip of the fingers and then pressing the base of the palm downwards and simultaneously sliding it over the drum head.

The *tabla* has a highly developed technique of playing and in the hands of a master it is capable of producing almost all the patterns of rhythms that a musician can conceive of. The well-established time cycles (*talas*) are rendered in terms of drumming phrases (*bols*) called *theka*. The *theka* constitutes the drummer's basic structure which he elaborates and upon which he freely improvises.

In a solo recital of the *tabla*, a master player can bring out a bewildering variety of subtle and graceful patterns and styles of playing, for instance the *qaida*, the *tukra*, the *peshkara*, the *paran*, the *gat*, the *mohra* and so on. The best known styles in *tabla* playing are *poorab ka baj, dilli ka baj*, and *ajrara ka baj*.

The *tabla* is also extensively used as an accompaniment to dancing.

Among the important living tabla players are Karamat Husain Khan, Wajid Husain Khan, Allarakha and Pandit Samta Prasad.

KHANJIRA (Khanjari)

The *khanjira* (also called *khanjira* in the north) is one of the most ancient musical instruments of the percussion variety. It is used all over India for accompanying folk songs and devotional music. In the south it has secured a more dignified place and is sometimes used for accompanying classical music as well.

The *khanjira* is very simple in construction and consists of circular wooden frame about 25 cm in diameter and about 6 cm broad. Across one side, some type of skin, preferably that of the wild lizard, is stretched. The other side is left open. The frame is provided with three or four slits and a few pieces of metal or coins are inserted in a cross-bar inside the slit. These make a jingling sound when the instrument is shaken. The *khanjira* is held in the left hand and the palm and the fingers of the right hand strike the skin to produce the variations. Usually the application of a little water to the stretched skin reduces its tension to the required pitch. The variations in sound are brought about by pressing the skin near with the four fingers while playing.

In a classical concert in the south, the *khanjira* is used to supplement the *mriḍangam*. Experts can produce, with only one hand, all the variations and patterns that are played on the *mridangam*.

In recent memory Pudukkottai Dakshinamurthi Pillai was a great exponent of Khanjira.

TAVIL

This drum consists of a barrel-shaped shell hollowed out of a solid block of wood. The skins on the two sides are stretched over hoops made of hemp and six or seven bamboo sticks bundled together. The hoops are fastened to the shell by means of interlaced leather thongs. A band of leather passes round the shell along the middle over the braces. It serves to tighten the instrument up to the desired pitch. The right side is played with the right hand, the wrist and the fingers while the left head is played with a stout stick. The skin on the right side is stretched very tight but not tuned to any difinite pitch.

In an open air performance, the *tavil* is hung on the shoulders, brought to the front and played while the performer stands.

It is noteworthy that during a *nagaswaram* recital, the *tavil* maintains a subdued rhythm even during the *raga alapana*. The *tanam* of the *raga alapana* is interspersed with bright passages on the *tavil.*

GHATAM

The *ghatam* is only an earthen pot with a narrow mouth and a big belly. It is naturally one of the most ancient percussion instruments in existence. In the north it is called *ghata* and is extensively used for accompanying folk music.

In the south, the *ghatam* finds a place of honour in the most serious classical music concerts and it appears that this has been so for at least a hundred years.

The clay used for making the *ghatam* is mixed with iron filings and then baked. The places noted for the manufacture of strong, durable and resonant *ghatam* suitable for classical music are Panruti and Manamadurai, both in southern India.

The *ghatam* is played with the two hands, the wrists, the ten fingers and the nails. The mouth of the pot is pressed against the stomach and the strokes given at the neck, the centre and the bottom of the outer surface achieve very considerable tonal variety. The *ghatam* is also capable of very fast tempo in rhythmic patterns. In a south Indian classical music concert, the *ghatam* is usually used only as a secondary instrument along with the *mridanagam*.

Pazhani Krishna Iyer was a great exponent of the *ghatam* in recent memory.

MORCHANG

The *morchang* (also *morchank, morchanga,* or *morsing*) is identical to the Jewish harp which is popular in the West and used all over the world in some form or other.

The instrument is made of wrought iron and resembles the head of a trident. A small resilient steel strip is soldered to a more or less circular brace. Passing through the centre of the brace, this steel tongue protrudes just a little above its 'neck', finishing in a short continuation piece which is bent at right angles.

The instrument is held between the thumb and forefinger of the left hand and the portion where it narrows down is held between the teeth. The performer moves the little steel 'tongue' to-and-fro and by making the cavity of his mouth bigger or smaller and by carefully manipulating the tongue and the breath, various sounds are produced. The strip itself is obviously capable of producing only one note, but the harmonics of this note become available in the shape of the mouth cavity. A small piece of wax applied at the tip of the strip reduces the pitch if desired.

The *morchang* is of very great antiquity. Some of the aboriginal tribes of Himachal Pradesh, Assam, and the hilly tracts of Hyderabad and other tribal folk use this instrument in some form or other. An instrument of this variety made of bamboo, used by the Chenchu tribes of Hyderabad is called the *tonda ramma*.

In the south, the *morchang* has achieved the dignity of a concert instrument and in a south Indian concert it is played along with the *mridangam*.. A skilful performer is able to bring out the various rhythmic patterns and variations of the *mridangam* with accuracy.

Among the experts within recent memory, the name of Morsing Sitarama Iyer, who was a court musician of the erstwhile Mysore State, stands out. He demonstrated the possibility of using the *morchang* in a classical concert as an accompaniment.

GETTUVADYAM

This is one of the rare stringed instruments of the south. The *gettuvadyam* is like an ordinary *tambura* with a support at the neck and there are four strings.

The instrument is placed in front of the performer and all the strings are struck simultaneously with two light bamboo blades held in both hands. While the left hand strikes the strings with regular rhythmic beats, the right hand plays intricate patterns that are reminiscent of the *mridangam*.

The *gettuvadyam* is used as a secondary instrument along with the *mridangam* in concerts of classical music in the south though only rarely. Masters of the *gettuvadyam* are very few and are found in the south only. Avidayarkoil Harihara Bhagavathar is one among them.

TUNTUNE

The *tuntune* is a popular instrument used for accompanying the characteristic folk music of Maharashtra, far instance *lavani*, *powada* and devotional songs. Though based on the principle of the *ektara*, it differs from that instrument in certain respects. Unlike the *ektara* which is made of gourd, the *tuntune* consists of a hollow cylindrical vessel made of wood or metal covered on the lower side with goat skin. A round stick about 75 cm long is fixed to the outer side of the vessel. The top of the stick is provided with a wooden peg. A metallic string tied to a small piece of stick is passed through the centre of the lower skin, taken through the centre of the vessel and fastened to the peg on the top. The instrument is held under the left arm and the string is plucked by means of a small stick held in the right hand. The sound produced resembles the drone of the *ektara* and serves as rhythmic accompaniment.

EKTARA

The *ektara* is the simplest of the stringed instruments with a single string which is plucked by the fingers. The string serves as the drone as well as the rhythmic accompaniment to the chanting of mendicants and wandering minstrels all over India.

The *ektara* is made from one piece of bamboo about 90 cm. in length and 4 to 5 cm. in diameter with a large gourd attached to the bottom. One end of the stick is inserted into the hollow of the gourd resonator the top of which is covered with parchment. A single string is fastened to a nail fixed to the protruding part of the bamboo beyond the resonator. This string passes over a crude bridge placed over the skin table and is fastened to a peg near the neck. The instrument is held either in the right hand or the left hand and the string is plucked with the forefinger.

The *ektara* is the same as the single-stringed *ektantri veena* which is mentioned in Sanskrit treatises. It is the precursor of the modern *veenas* of the north and the south.

RAVANHATHO

The earliest instrument played with a bow is probably the *ravanhatho* or *ravanastra*, attributed to Ravana, the epic king of Sri Lanka. This instrument seems to have been used in Vedic times and has been referred to in Sanskrit treatises. What this instrument was like is rather doubtful but in some parts of Gujarat and Rajasthan there exists an instrument bearing more or less the same name. It is called *ravanhatho* and is used by wandering musicians called *bharataris*.

The *ravanhatho* consists of a resonator made of half a coconut shell. The shell is polished and covered with skin which is fastened to the underside of the shell by means of a cotton thread. A bamboo stick, about 60 cm. long, is fixed to the resonator. The instrument carries two main strings, one of which is made of a species of flax or horsehair while the other is of steel. Sometimes there are about 12 sympathetic strings of steel, all of them attached to a series of pegs fixed on the sides of the stick towards the end.

While playing, the resonator is pressed against the left side of the chest while the handle faces upwards. It is played with a crude bow made of horsehair. Small bells (*ghungurus*) are attached to the handle of the bow so that a jingling effect is produced as the instrument is played. Simple music covering a range of four to five notes can be played easily.

GOPICHAND

The *gopichand,* also called *gopiyantra* or *khamak.* is built on the principle of the *ektara* and is special to Bengal.

A bamboo about 75 cm. in length is split into two lengthwise but kept whole at one end. The lower ends of the two arms are fixed to the sides of a small cylindrical vessel made of wood with its bottom covered with skin. A string of steel tied to a knob at one end passes through the centre of the skin and the free end is attached to a peg on top of the bamboo. The knotted end prevents the string from slipping inside when it is in tension. Both the arms are held in the left hand and alternately pressed and released, while the string is simultaneously plucked with the right hand. The squeezing of the two arms reduces the tension of the string. When the string is released the original tension is restored. When the tension varies, the pitch also varies. A limited range of notes can thus be played.

The *gopichand* is exclusively used by mendicants for accompanying pastoral songs and is a favourite instrument of the *bauls* of Bengal. The instrument is used mainly for rhythmic purposes and is often played in combination, with other instruments like the *manjira*, the *kartal*, the *khol* and the *dhak*.

ANAND LAHARI

The *anand lahari* belongs to a variety of stringed instruments which are used for rhythmic purposes and is peculiar to Bengal.

The instrument consists of a wooden drum, rather like a small *dholak*, with only one of the sides covered with skin. Through the centre of this skin a string made of gut is passed, one end of which is fastened to a small knob to prevent it from slipping inside when the string is in high tension. The other end is taken through the inside of the drum and tied to a small piece of wood. The player holds the instrument between the stomach and the elbow of the left side. The gut string is subjected to high tension by holding the piece of wood high. The string is then plucked by means of a small stick held in the right hand. By alternately tightening and releasing the string while plucking it, notes of different frequencies are produced. It is possible to produce very interesting patterns of rhythmical sounds on this instrument.

The *anand lahari* is generally used as accompaniment to songs like the *palligeet* of the people of the soil, the *sari* of the boatmen and other folk songs sung during marriages, festivals and other ceremonies in Bengal.

Another folk instrument of the same description used in Uttar Pradesh is the *dhundunawa*.

The *jamidika* is built on the same principle as the *anand lahari* of Bengal and is used for accompanying folk ballads in Andhra Pradesh.

Another instrument almost like the *anand lahari* is the *chowdkhi* used in Dharwar and certain regions of Maharashtra. It is specially used by the *devadasis* who are the devotees of the goddess Renuka or ellamma and who go out in singing parties. It is also used as accompaniment to some of the folk songs of Maharashtra.

SHANKH

The *shankh* or the conch is one of the most ancient wind instruments known to man. It is held very sacred and references to it are found in all the ancient literatures of India The *shankh* is regarded as one of the attributes of Lord Vishnu. It has been used in temples, religious ceremonies, festivals and processions. It is also played by wandering mendicants and musicians.

The *shankh*, before it can be used as an instrument, has to be drilled so that a hole is produced at the base in such a manner that the natural whorl is not disturbed. When the *shankh* is blown, the wind passes through the different whorls and produces a loud, sharp and piercing sound which goes very far, and by its very nature quickly attracts attention. The *shankh* was used as a war trumpet on the battlefields and it often accompanied the *dundubhi*, the *bheri* and other drums.

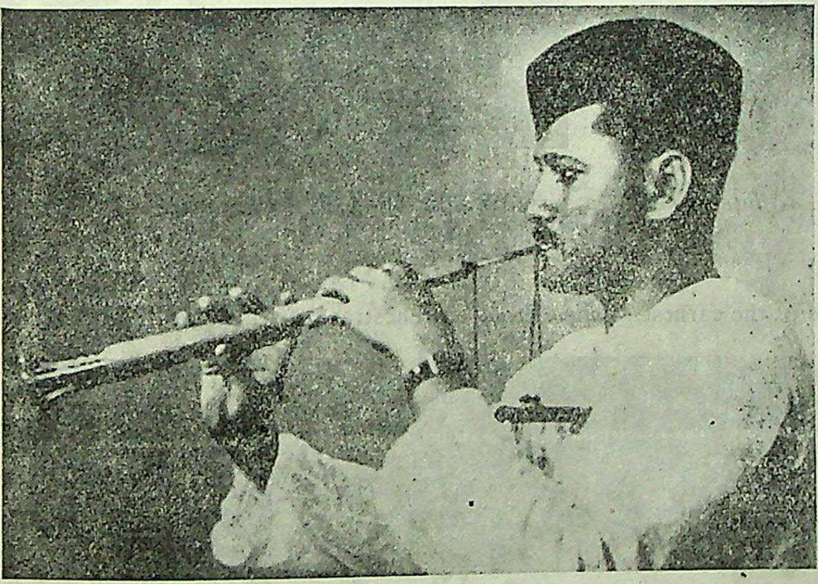
In the *Mahabharata*, the *shankh* used by Lord Krishna on the battlefield was called *panchajanya* while that of Arjuna was named *devadutta*.

The *shankh* was an important instrument during the Buddhist period and representations of it are found in the ancient sculptures at Sanchi, Amaravati. Bharhut and other places.

Sometimes a brass mouthpiece is fitted to the *shankh* while the other end is mounted with an elaborate floral expansion of brass. This type of ornamental *shankh* is called *dhavalashankha* in the south. A type of *shankh* with a long mouthpiece attached to it is shown in the sculptures at Bharhut (3rd century B.C.).

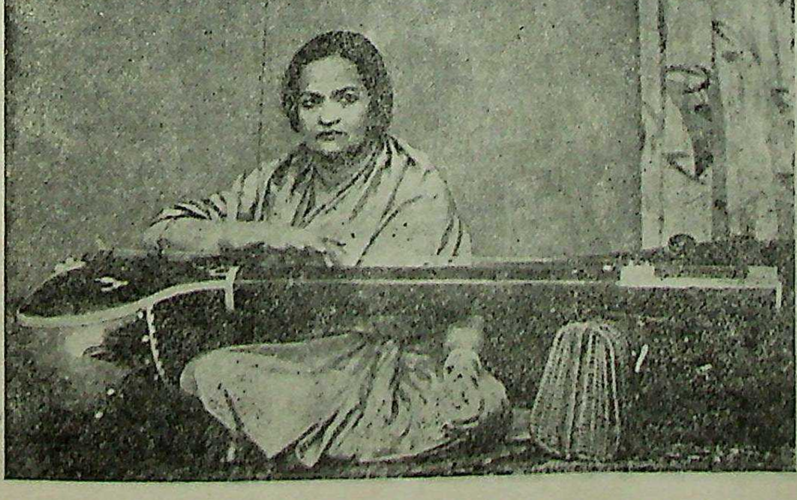
Peculiar rhythmical effects can be produced on the *shankh*. Sometimes it is used as an accompaniment to the *nagaswaram* in the *karaka*, a popular rural dance of the south.

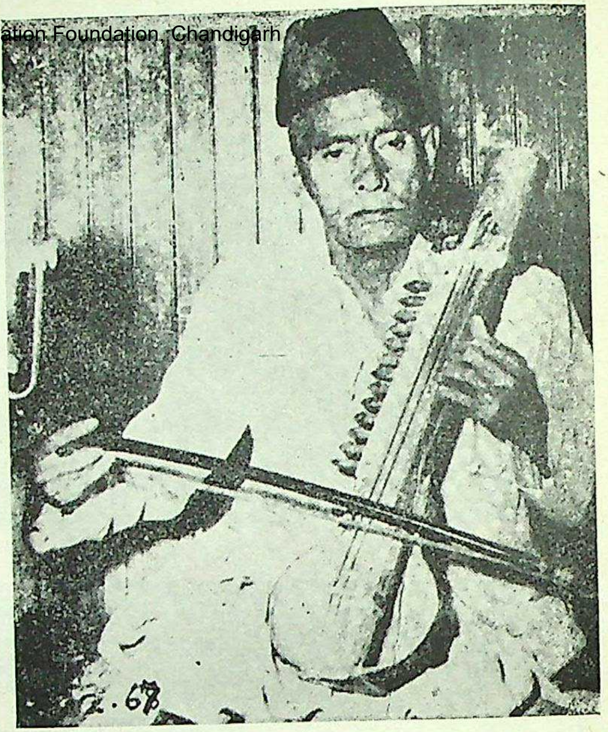
Ustad Ali Akbar Khan on the *sarod*



Ustad Bismillah Khan on the *shahnai*

Begum Akhtar on the *tambura*

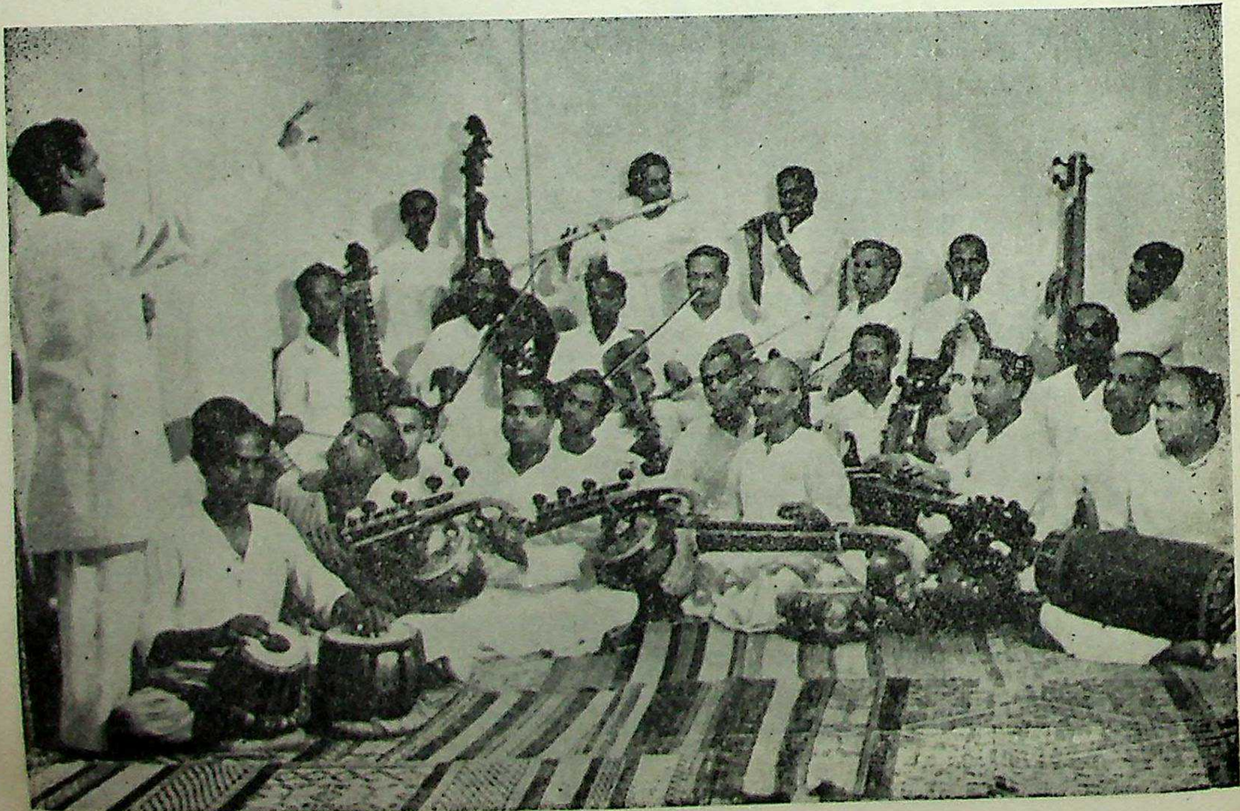


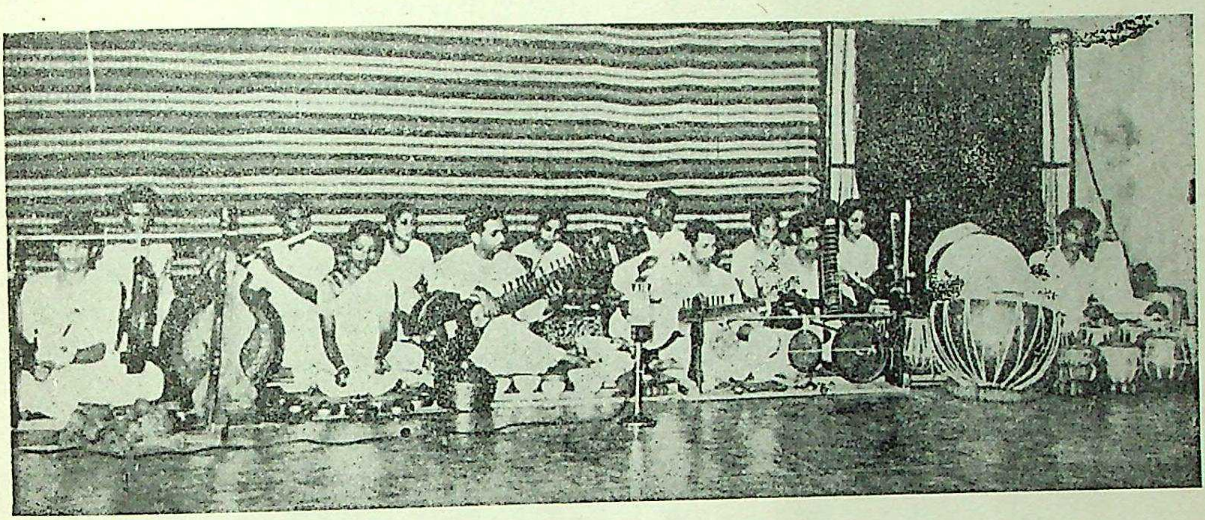


A *flute* player.

Ustad Bindu Khan on the *sarangi*.

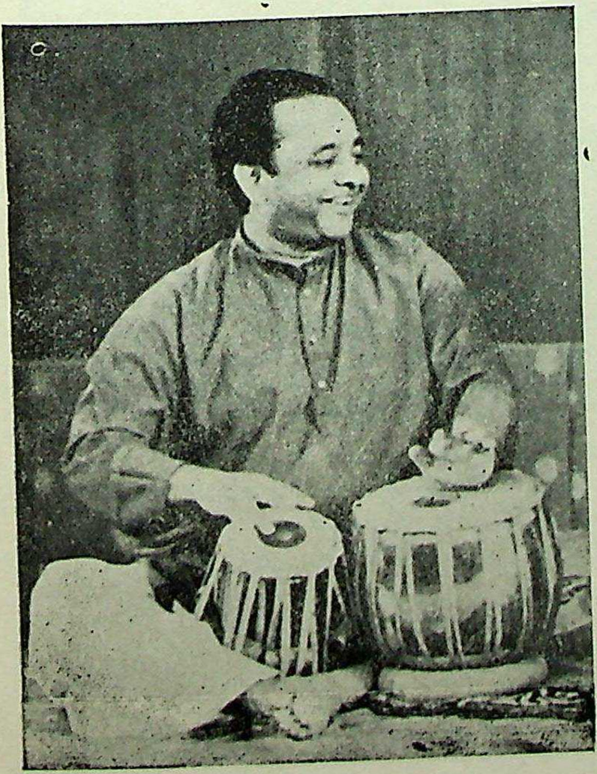
One of the earliest "*Vadya Vrind*" (orchestras) of All India Radio, Delhi.



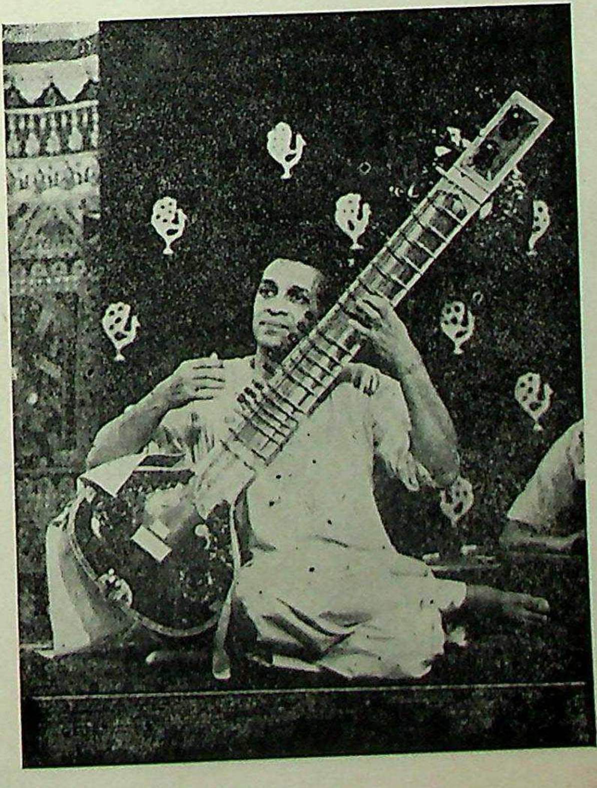


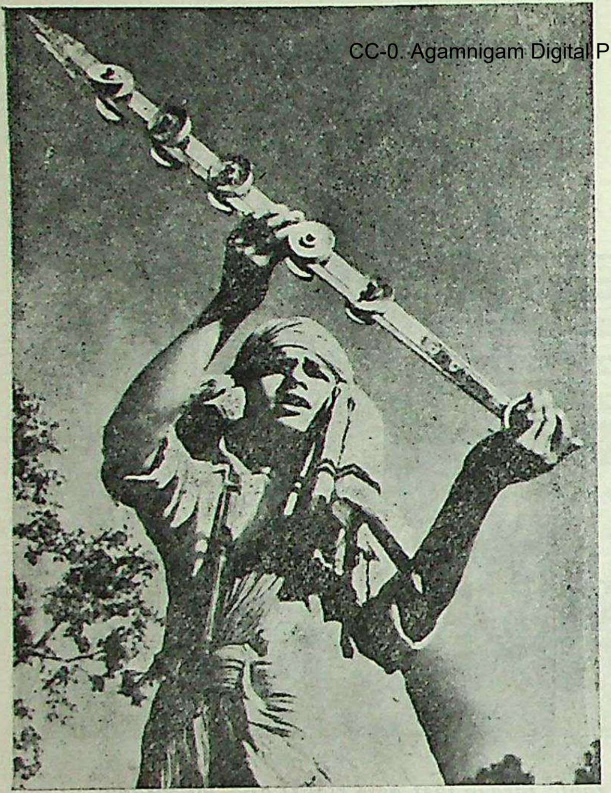
An orchestra. Two significant parts of this picture are *tabla tarang* (extreme right) and *jal tarang* (left) being played by a woman artiste in the foreground.

Ustad Alla Rakkha on the *tabla.*



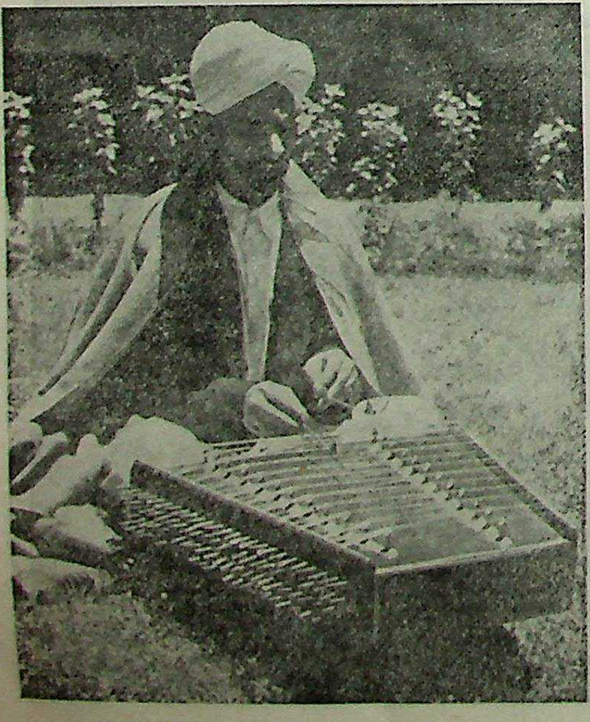
Pandit Ravi Shankar on the *sitar.*

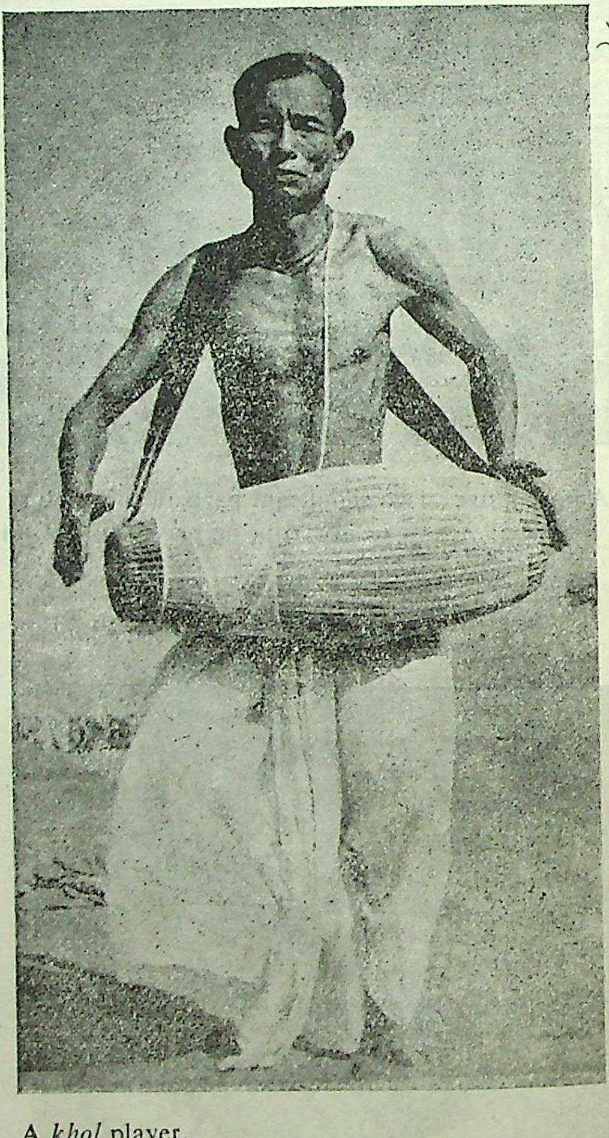




A *chimta* player.

A *santllr* player.





A *khol* player.

AYARKUZHAL

The *ayarkuzhal* is literally the cowherd's flute. The instrument is of great antiquity and is used by the cowherds in the lesser known hilly tracts of southern India.

The instrument is a simple bamboo staff about 1.2 m long. There is a mouthpiece in the exact centre of the bamboo into which a reed made of palm leaf is fixed. There are about six holes on either side. The lower of these finger-holes are used for playing. A constant drone is produced from the upper holes and this is achieved by the player's expediency in storing the necessary air in his mouth and blowing continuously through the mouthpiece. The performer inhales through the nostrils to replenish the supply of air in the mouth.

The tone of this instrument is soft and sweet.

The *alugoyya* is another instrument of the southern fringes of Orissa and the Telengana region of Andhra Pradesh. The *alugoyya* is mostly played by the cowherds to while away the lazy afternoons as the cattle browse in the meadows. Sometimes this instrument is used as an accompaniment for some folk dances on festive occasions.

MAGUDI

The *magudi*, also called *pungi* or *been* in the north, is a very ancient wind instrument. Its old name was *nasayantra* and it is said to have been originally played by blowing the air into it through the nostrils. It is also called *bhujanga swaram.*

The *magudi* consists of a bottle-shaped gourd into which two pieces of cane reed are inserted and fixed with wax. One of the pipes is pierced with four or five finger-holes which are played upon. The other pipe has only one hole which gives a constant drone. The mouth-hole is fitted with a small reed into which air is continuously blown. This continuous blowing can be effected by keeping the mouth filled with a supply of air.

The *magudi* is nowadays used by jugglers and snake charmers. It was formerly used on religious occasions. The instrument is so constructed as to produce the Karnatak *Hanumattodi* scale, or the *Bhairavi* scale of the Hindustani system.

SHRINGA

The horn is known by its Sanskrit name *shringa* in the north. In the south it is generally called *kombu* which is a Tamil term. The horn is a long, more or less conical, tube ending in a large bell and having a funnel-shaped mouthpiece. The *shringa* or *kombu* was literally a horn of an animal and for a long time it continued to be simply a curved conical tube. It was used by the ancient people to call assemblies, to give signals and to play in their ceremonial dances and festivals. Later on, brass horns came to be used and several varieties of horns are now used in temple services processions, marriages etc.

The horn produces a somewhat hoarse tone and is not capable of many notes. No attempt is made to play the instrument scientifically and indeed its proper compass is not even understood. There are different kinds of brass horns in use all over India. They are called by a great variety of names and are straight, curved, S-shaped, serpentine and of many other shapes.

The *shringa* is sometimes called *kahala* in the north. The instrument is 1.2 to 1.8 m long and consists of four or five brass tubes that fit into one another. It has a shrill tone and is used in temple processions, receptions and public amusements of various types. The term *kahala* often occurs in Sanskrit literature.

The *turahi* or *tutari* is a curved trumpet of brass, like a bugle. This instrument is also used in religious processions.

The *karna* is a heavy curved pipe with a harsh and loud sound. It is used along with drums and the percussion instruments on important occasions like marriages and other festivals. It is made entirely of brass.

The *kuma* is a straight trumpet made of brass which is considered sacred and used in religious institutions.

The *bhuri* is also a curved brass horn used in temples and on religious occasions.

The *ekkalam* is a straight trumpet of brass or copper consisting of four tubes which fit into one another. It is commonly used in temple processions.

The *tiruchinnam* consists of a pair of brass trumpets each about 75 cm in length. It is used during temple services in the south. The two trumpets are held in the mouth and blown simultaneously.

ALGHOZA

The *alghoza* is special to Punjab.

It is an ordinary flute with four finger-holes and is played by blowing straight through the mouthhole. Usually the *alghoza* is played in pairs by the same person and the effect produced is most enchanting. It is usually played as accompaniment to Punjabi folk songs and adds a peculiar colour of its own. The *alghoza* is also used in certain parts of Andhra Pradesh.

NAGARA

The *nagara* (also called *naqqara*) is one of the oldest percussion instruments extant in most part of India. This instrument is known as *naqqarah* in West Asia. Some ancient varieties of this instrument, known as *bheri* and *dundubhi*, occupied a place of great honour and were used in battle. Indian epics make mention of these martial drums. The battle drum was regarded with great veneration and the capture of this drum meant the defeat of the army.

The *nagara* is a big conical drum covered with hide. Most temples and religious institutions in India own one. It is used in religious worship and heads processions of temple deities.

The shell is of rivetted copper, brass or sheet iron. The diameter of the head is between 75 cm. and 90 cm. In some places in north India, there are *nagaras* with a diameter of as much as 1.5 m. The skin is strained upon hoops of metal and stretched by means of leather thongs or thick ropes or thick ropes passing round the underside of the shell. It is beaten with sticks and the sound produced is deep and imposing.

A set of *naqqaras* usually accompanies *shahnai* players in the north. One drum is smaller than the other and they are played with sticks.

The *naqqara* is one of the constituents of the famous *naubat*, the royal ensemble of the Mughal court. The *naqqarkhana* of Emperor Akbar comprised twenty pairs of *naqqaras* besides other instruments.

SHUDDHA MADDALAM

The *shuddha maddalam* is based on the same principle as the ordinary *mridangam* of the south except that it is bigger in size. On the right head the black paste occupies more space and is much thicker than in the *mridangam*. The tone of this drum is loud and carries far. It is an indispensable accompaniment to the Kathakali dance-drama of Kerala and is also one of the *panchavadyam* of the state.

The *shuddha maddalam* is played during rituals in some of the temples of the south, notably the Tiruvarur temple.

CHENDA

The *chenda* is a cylindrical wooden drum, 61 cm. in length and about 30 cm. in diameter, both sides covered with skin. It is not tuned to any definite pitch. The drum hangs in front of the player who beats it while standing with two sticks held in both the hands. It is an important percussion instrument used in Yakshagana, a folk dance-drama popular in the northern and southern regions of Karnataka. It is also used as an accompaniment to the Kathakali dance-drama. The sound produced by the *chenda* is so loud that it can be heard several kilometers away.

In a Kathakali dance recital, the *chenda* is generally played along with the *maddalam,* a drum similar to the northern *pakhawaj* but larger in size. The rolling sounds of the *chenda* combined with the more subdued tone of the *maddalam* and the staccato banging of gongs and cymbals release sound images that blend with the *mudras* of the hand and in unison produce a powerful effect. The local name for the playing of this group of instruments is *chendamelam* and the preliminary drumming before the Kathakali dancing actually begins is called *keli kottu.*

DHOL

The *dhol* is one of the commonest percussion instruments in India, mainly used for accompanying folk music. It also adds a gay air to festivals and ceremonial occasions. Between the loud and noisy *dhol* of the aboriginal tribes and the more subdued *dholak* of the common folk, there are endless varieties which give colour and rhythm to any music they are associated with.

The *dhol* is a barrel-shaped drum made of wood, usually about 45 or 50 cm in length and 30 cm. in diameter. The size varies greatly in different places.

The thickness of the shell is from 2 to 3 mm. The skin on both the heads is stretched round leather hoops fastened to the shell and kept taut by means of interlaced leather thongs or thick rope. A leather band passed round the shell and over the braces serves to tighten the two heads to the desired pitch.

The *dholak*, similar to the *dhol* is popular all over India. The shell is hollowed out of a solid block of wood. The braces are of thick cotton thread and pass through circular rings of metal near the middle of the shell. These rings help in the tuning of the two heads,

The *dholak* is played with the hands and used throughout India in folk music, dance, festivals and ceremonies.

In southern India, it was sometimes used in classical music concerts too. Nannu Miyan was a noted player of this instrument. A quarter of century ago, the leading *mridangam* player, Alagianambi, sometimes accompanied musical performances on the *dholak*.

KHOL

The most widely used percussion instrument of Bengal is the *khol*. It is also called *mridanga* though it, differs both from the *pakhawaj* of the north which is also called *mridang* and from the popular southern *mridangam*.

The *khol* is made of burnt clay closely covered with thin strips of leather lacing. The right side is much smaller than the left side and is about 5 cm. in diameter. The pitch is constant and cannot be altered as in other drums. The right side gives a high-pitched metallic sound while the left side produces a deep bass sound which is used in much the same way as the *bayan tabla*.

The *khol* is a popular accompaniment to devotional music, especially the *kirtan*. It is an integral part of the accompaniment in the folk music of rural Bengal and in Rabindra Sangeet,

TUMBAKNARI

The *tumbaknari* is a drum used by the people of Kashmir. It is shaped like a long-necked water pot with the bottom knocked off and covered with skin. The instrument is held under the left arm and played with the right hand. Sometimes the player squats on the floor, places the instrument on the left side of his lap and plays with both the hands.

The *tumbaknari* is a popular instrument used for accompanying folk music along with other instruments of the region such as the *rabab*, the *saz*, the *dholak* and the *ghata*.

URUMI

The *urumi* belongs to the south. It is a double-sided drum which is narrow in the centre and broadens towards the ends. It is a little longer than the *pambai* (described later) and is played with a curved stick about 45 cm long which is held in the left hand. The stick does not actually strike the head but is rubbed up and down against the skinned surface on the left side, producing a sound resembling the growling of an animal.

The *urumi* is one of the three instruments constituting the ensemble known as *urumi melam,* the other two being a small *nagaswaram,* and a small *pambai.* The *urumi melam* is mainly used for funeral processions and never for celebrations or auspicious functions. Sometimes the players, with bells tied round their ankles, dance as they play.

HURUK

The *huruk* is built on the principle of the *damaru* (described later) but is bigger in size. Both ends are covered with skin and laced with cotton thread. The The instrument is hung over the left shoulder and the right side of the drum is beaten with the hands. The left hand holds the central braces, and varies the tension, thereby effecting changes in the tone of the instrument.

The *huruk* is a popular instrument for accompanying folk songs in the hilly districts of Kumaon and Garhwal, and other regions of Uttar Pradesh.

PAMBAI

The *pambai* consists of two cylindrical drums each about 30 cm. in length placed one over the other and tied together. The upper drum is made of brass and the lower one of wood. The sides of both are covered with skin.

The *pambai* is hung in front of the body and tied to the waist. It is played by the artiste in a standing position. The right side of the upper drum is played with a curved stick and the left side of the lower drum with the hand.

This interesting instrument is used largely as accompaniment to folk dramas and ballads in southern India. It is used also in music played or sung to invoke lesser deities and nature gods. In such instances, the *pambai* is played along with the *nagaswaram.* Skilled performers can produce fascinating rhythmical effects on this instrument.

KIRIKATTI

The *kirikatti, kinikatti, kidikatti, or kidikattu* consists of two conical drums about 30 cm in height and 20 cm in diameter. These drums are joined together, tied to the waist and played. with curved cane sticks covered with leather or cloth. One of the drums produces a muffled sound while the other has a clear, bright tone.

The instrument is used mainly to accompany *nagaswaram* recitals and rural dances in the south. It is also used in some temples for special occasions connected with festivals, for instance in the Tiruvarur temple.

DAMARU

The *damaru* is a small drum, shaped like an hourglass. It is called *dhakka* in Sanskrit and is frequently mentioned in ancient Sanskrit literature. It is an attribute of Lord Shiva who is said to have played it during the cosmic dance. In ancient sculpture, it is represented as an attribute of Shiva as Nataraja, the Lord of Dance.

The length of the *damaru* varies from 15 to 30 cm. A small ball of metal or cork is attached to a string which is wound round the narrow waist of the drum over the braces connecting the two heads. The heads are covered with parchment.

The instrument is held in the right hand and rolled from side to side. As the drum shakes, the end of the string bearing the metal ball strikes the centre of both the heads alternately and produces rhythmical strokes. The braces on the drum can be tightened or loosened by squeezing and releasing the fingers. This produces notes of different frequencies.

There are longer varieties of the *damaru* which are provided with two knotted strings, one near each face. This arrangement is suitable for rhythmical strokes of fast tempo.

The *damaru* is used for accompanying devotional and ritualistic folk music. It is also associated with magic shows, spells and other primitive rites of the common people.

The *damaruga* belongs to the same family as the *damaru*. It is used in the Karnatak and Mysore regions for accompanying temple music and on ceremonial occasions.

The *budubuduke* is another small member of the *damaru* family. It has two small strings with knotted ends. The drum is held between the thumb and the forefinger. It is a very popular instrument and is always found in the hands of jugglers and wandering minstrels in India.

UDUKKU

The *udukku* or *udukkai* is a small drum, about 30 cm in length, with a narrow waist in the middle. Its two sides are covered with thin membrane and laced with cotton twine. Right along the middle, passing over the twine, is a thick tape, the squeezing of which tightens the brace resulting in the sharpening of the tone.

The instrument is made of brass, wood or clay. It is held in the left hand and played upon by the fingers of the right hand.

The *udukku* is generally used by singers in Tamil Nadu to accompany the ballads they sing. It is also used by fortune-tellers when they invoke their favourite deities to drive away evil spirits, and in the temples of village deities.

The *edakka* or *idakka* is another instrument built on the same principle. It is slung over the left shoulder and the right side is beaten with a stick held in the hand. The left hand is used for tightening or loosening the tape wound round the middle. Variations in tone are produced by varying the degree of pressure on the tape. Simple melodies extending over one octave can be played on this instrument.

The *edakka* is one of the five instruments that constitute the *panchavadyam* of Kerala.

This instrument seems to be popular in some parts of Karnataka also.

TIMILA

The *timila* is a variety of double-faced drum in the shape of an hourglass, used mostly in the ritualistic music in the temples of Kerala. It also leads processions of temple deities.

The instrument is carved out of a block of wood and is about 60 cm long. The wall of the shell is oblique, standing at an angle of 75 degrees to the face. Skins are stretched over bamboo woops that are fitted over the two sides and held in position by cords running along the whole length of the drum. The instrument is slung over the left shoulder and played only on the upper side with both hands. It is played while standing. The head is tuned to a definite pitch.

The *timila* is also a constituent of the famous group of instruments called *panchavadyam.*

DUFF

An important and popular family of drums used by the common people in India is the *duff*. This type of drum is very simple in construction. It consists of an open circular frame with only one side covered with skin. It can be played either with the hand or with sticks. The diameter of such drums varies from 7 cm. to 90 cm. These drums are used mostly for accompanying the music, devotional songs, and dance of the common folk. It is also used on festive occasions. These drums are called by various names in different regions. Some of the names are *damphla, daera, daphde, dappu,* and *tambattam.*

Duff is the northern name of this drum. It consists of a round frame of wood about 15 cm. wide and about I m. in diameter covered on one side with skin which is stretched by means of a network of thin leather thongs. The drum is held in the left hand and gripped against the stomach. It is played with the fingers of the right hand. A thick stick held perpendicularly over it by the fingers of the left hand is made to strike the instrument at intervals.

The *duff* is closely associated with the Holi festival. It is also used on other festive occasions and in processions, sometimes along with other drums.

In Maharashtra, the *duff* is used for accompanying typical folk songs like *lavanis, powadas* and devotional *abhangas.*

Further south; the instrument is called *tappu* (in Tamil) and *dappu* (in Telugu). There such drums are used while making important public announcements and for accompanying folk songs during festivals and ceremonies. Sometimes the player regularly beats the rim of the drum with a small metal ring.

The *patha* is the name given to this drum in Sanskrit texts.

BRAHMATALAM

The *brahmatalam,* also called *brahatalam* is a pair of very large, flat, metallic cymbals. The diameter is usually 20 to 25 cm but can sometimes be even as much as 30 cm. These cymbals are used in temple rituals. The name *ilai talam* is given to cymbals of this variety which are played along with other instruments in the Kathakali dance-drama.

In the north, these cymbals are known as *jhanj.*

Dancing figures of women playing the *brahmatalam* are found in the temple at Konarak and in the wall paintings at Tanjavoor.

MANJIRA

The *manjira* is a pair of small metallic cymbals used for rhythmic purposes They are flat, circular discs usually connected by a cord or cotton thread passing through a hole in their centres. The *manjira* produces a pleasant sound and is used mostly as an accompaniment to devotional music all over India. Experts are able to produce attractive rhythmic variations even with this tiny instrument.

In the south, the instrument is called *jalra, jalar* or *jalara* and is used in devotional music and religious discourses. The *jalras* made in Pandharpur (Maharashtra) are noted for their tonal quality.

The term *jalra* seems to have been derived from *jhallara*, *jhallari* and *jhallarika* which occur in Sanskrit treatises.

There are many varieties of cymbals belonging to this family. One of the sculptures at Konarak shows the figure of a woman playing the cymbals (*kamsyatala* or *kinaini jalra*).

The *talam* or *auzhitalam* of Tamil Nadu is a pair of basin-shaped cymbals, the tinkling of which goes very pleasingly with any soft music in dance, drama, or devotional songs. The *talam* is heavier than the *manjira* (*jalra*) and generally only the edges of the *talam* are struck. The two cymbals are not connected by any cord but at the back of each is a tassel of silk or piece of wood which serves as a handle.

The talam used by singing parties in the south resembles the *jalra* but is much thicker.

CHIMTA

The *chimta* is a rhythmic instrument popular in Punjab and the neighbouring regions. It consists of two flat blades of iron 60 cm long with pointed ends. One end of both is joined together by an iron ring. A series of circular metal rings are loosely fixed to the two arms of the instrument. It is held in both the hands and the blades pressed to give rhythmic effect. The effect is more or less similar to tha produced by the *kartal.*

The *chimta* is used largely in the devotional and social music of the Punjab. It is an effective accompaniment to *bhajans* and *kirtans*. The *chimta* is usually supplemented by the *dholak*.

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